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SEQUENCE LISTING

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       LACROIX, Patricia
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       SEQUENCE ENCODING THESE POLYPEPTIDES AND APPLICATIONS THEREOF

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<151>  2002-10-08

<150>  FR 0302439
<151>  2003-02-27

<150>  US 60/493,490
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aggcgctcca gggtggggat gatcccggcg ggcgtggggt cggcgagcat ctcctcgctc 7560

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aggatcagcg cgtacgggtc gccctggttg ccggcgcacc agtgtgcggc ccgggtcagc 9960

tggagccgac ggccgagcgc acggacgccc gtgctcgtgt ccgcgctcgt gctcgtgctc 10020

gcgggggccg tttccgtggc aagggtgggc atggctgccc tgcctttctt ctcgggtcga 10080

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ccgggccgcg gcggtccgcg tcggcaccgg gtcagcggcg ggtgccgatg aacagcccgc 10200

gaccggacgg gccgccttcc tggtagacca cgtcgcagcc ggcgcgctcg aaggccgcct 10260

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gagcatggtg aagtggttgc cgggcacgtc ggcgacggtc cgtgcgaacg ggacctggga 11040

ccgccagtcg ccccgcgccc cgcccgcggg cggccacgcg cacaggggtt cggacgcccg 11100

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gccggccatg g 11171

<210> 3
<211> 711
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(711)

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Met Tyr Ala Asp Asp Ile Ala Ala Val Tyr Asp Leu Val His Glu Gly
1               5                   10                  15

aag ggg aag gac tac cgg cag gag gcc gag gag atc gcc gca ctc gtg        96
Lys Gly Lys Asp Tyr Arg Gln Glu Ala Glu Glu Ile Ala Ala Leu Val
            20                  25                  30

cgc gtc cac cgg ccg ggc gcc cgg acc ctg ctc gac gtg gcc tgc ggc       144
Arg Val His Arg Pro Gly Ala Arg Thr Leu Leu Asp Val Ala Cys Gly
        35                  40                  45

acc ggc cag cac ctg cac cac ctg gac ggc ctc ttc gac cac gtc gag       192
Thr Gly Gln His Leu His His Leu Asp Gly Leu Phe Asp His Val Glu
    50                  55                  60

ggc ctg gaa ctc tcc gcc gac atg ctg gcc ctc gcg acc ggc cgg aac       240
Gly Leu Glu Leu Ser Ala Asp Met Leu Ala Leu Ala Thr Gly Arg Asn
65                  70                  75                  80

ccc ggt gtc acc ttc cac caa ggg gac atg cgc tcg ttc tcc ctg gga       288
Pro Gly Val Thr Phe His Gln Gly Asp Met Arg Ser Phe Ser Leu Gly
                85                  90                  95

cgc cgg ttc gac gcg gtg acc tgc atg ttc agc tcc ata ggc cac ctg       336
Arg Arg Phe Asp Ala Val Thr Cys Met Phe Ser Ser Ile Gly His Leu
            100                 105                 110

cgg acc acc gac gaa ctc gac agc acg ctg cgg gcc ttc acc gac cac       384
Arg Thr Thr Asp Glu Leu Asp Ser Thr Leu Arg Ala Phe Thr Asp His
        115                 120                 125

ctc gaa ccg tcc ggc gtc atc gtc gtc gaa ccc tgg tgg ttc ccc gag       432
Leu Glu Pro Ser Gly Val Ile Val Val Glu Pro Trp Trp Phe Pro Glu
    130                 135                 140

tcc ttc acc ccc ggt tac gtc ggc gcc agc atc acg gag gcg ggc gag       480
Ser Phe Thr Pro Gly Tyr Val Gly Ala Ser Ile Thr Glu Ala Gly Glu
145                 150                 155                 160

cgc acc gtc tgc cgg gtc tcg cac tcc gta cgg gag ggg aac gcc acc       528
Arg Thr Val Cys Arg Val Ser His Ser Val Arg Glu Gly Asn Ala Thr
                165                 170                 175

cgc atc gag gtg cac tac ctc ctc gcc gga ccc ggc ggc gtc cgt cac       576
Arg Ile Glu Val His Tyr Leu Leu Ala Gly Pro Gly Gly Val Arg His
            180                 185                 190

ctg acc gag gac cac acc atc acc ctg ttc ccg cgc gcc gac tac gag       624
Leu Thr Glu Asp His Thr Ile Thr Leu Phe Pro Arg Ala Asp Tyr Glu
        195                 200                 205

gcg gcc ttc gag cgc gcc ggc tgc gac gtg gtc tac cag gaa ggc ggc       672
Ala Ala Phe Glu Arg Ala Gly Cys Asp Val Val Tyr Gln Glu Gly Gly
    210                 215                 220

ccg tcc ggt cgc ggg ctg ttc atc ggc acc cgc cgc tga                   711
Pro Ser Gly Arg Gly Leu Phe Ile Gly Thr Arg Arg
225                 230                 235
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<210>  4
<211>  236
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  4

Met Tyr Ala Asp Asp Ile Ala Ala Val Tyr Asp Leu Val His Glu Gly
1               5                   10                  15


Lys Gly Lys Asp Tyr Arg Gln Glu Ala Glu Glu Ile Ala Ala Leu Val
            20                  25                  30


Arg Val His Arg Pro Gly Ala Arg Thr Leu Leu Asp Val Ala Cys Gly
    35                  40                  45


Thr Gly Gln His Leu His His Leu Asp Gly Leu Phe Asp His Val Glu
    50                  55                  60


Gly Leu Glu Leu Ser Ala Asp Met Leu Ala Leu Ala Thr Gly Arg Asn
65                  70                  75                  80


Pro Gly Val Thr Phe His Gln Gly Asp Met Arg Ser Phe Ser Leu Gly
                85                  90                  95


Arg Arg Phe Asp Ala Val Thr Cys Met Phe Ser Ser Ile Gly His Leu
            100                 105                 110


Arg Thr Thr Asp Glu Leu Asp Ser Thr Leu Arg Ala Phe Thr Asp His
    115                 120                 125


Leu Glu Pro Ser Gly Val Ile Val Val Glu Pro Trp Trp Phe Pro Glu
    130                 135                 140


Ser Phe Thr Pro Gly Tyr Val Gly Ala Ser Ile Thr Glu Ala Gly Glu
145                 150                 155                 160


Arg Thr Val Cys Arg Val Ser His Ser Val Arg Glu Gly Asn Ala Thr
                165                 170                 175


Arg Ile Glu Val His Tyr Leu Leu Ala Gly Pro Gly Gly Val Arg His
            180                 185                 190


Leu Thr Glu Asp His Thr Ile Thr Leu Phe Pro Arg Ala Asp Tyr Glu
    195                 200                 205


Ala Ala Phe Glu Arg Ala Gly Cys Asp Val Val Tyr Gln Glu Gly Gly
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210 215 220

Pro Ser Gly Arg Gly Leu Phe Ile Gly Thr Arg Arg
225 230 235

<210> 5
<211> 1272
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(1272)

<400> 5
atg ccc acc ctt gcc acg gaa acg gcc ccc gcg agc acg agc acg agc 48
Met Pro Thr Leu Ala Thr Glu Thr Ala Pro Ala Ser Thr Ser Thr Ser
1 5 10 15

gcg gac acg agc acg ggc gtc cgt gcg ctc ggc cgt cgg ctc cag ctg 96
Ala Asp Thr Ser Thr Gly Val Arg Ala Leu Gly Arg Arg Leu Gln Leu
20 25 30

acc cgg gcc gca cac tgg tgc gcc ggc aac cag ggc gac ccg tac gcg 144
Thr Arg Ala Ala His Trp Cys Ala Gly Asn Gln Gly Asp Pro Tyr Ala
35 40 45

ctg atc ctg cgc gcc gtc gcc gac ccc gag ccg ttc gaa cgg gag atc 192
Leu Ile Leu Arg Ala Val Ala Asp Pro Glu Pro Phe Glu Arg Glu Ile
50 55 60

cgg gcc cgc gga ccg tgg ttc cgc agc gaa cag ctg gac gcc tgg gtg 240
Arg Ala Arg Gly Pro Trp Phe Arg Ser Glu Gln Leu Asp Ala Trp Val
65 70 75 80

acc gcg gac ccc gag gtg gcg gcg gcc gtc ctg gcc gac ccg cgc ttc 288
Thr Ala Asp Pro Glu Val Ala Ala Ala Val Leu Ala Asp Pro Arg Phe
85 90 95

ggc acg ctg gac cgg gcc gga cgc cgc ccg gac gag gaa ctg ctg ccc 336
Gly Thr Leu Asp Arg Ala Gly Arg Arg Pro Asp Glu Glu Leu Leu Pro
100 105 110

ctc gcc gag gcg ttc ccc cac cac gaa cgc gcg gag ctc gta cgc ctg 384
Leu Ala Glu Ala Phe Pro His His Glu Arg Ala Glu Leu Val Arg Leu
115 120 125

cgg gcg ctg gcc gcc ccg gtg ctc agc cgg tac gcc ccg gcc cag gcg 432
Arg Ala Leu Ala Ala Pro Val Leu Ser Arg Tyr Ala Pro Ala Gln Ala
130 135 140

ccc tgc gcg gcg cgc acc acc gcc cgc aga gtg ctc ggc cgc ctg ctg 480
Pro Cys Ala Ala Arg Thr Thr Ala Arg Arg Val Leu Gly Arg Leu Leu
145 150 155 160

ccc acc ggt gac gcc ggg ttc gac ctt gtc ggc gag gtc gcc cgg ccc 528
Pro Thr Gly Asp Ala Gly Phe Asp Leu Val Gly Glu Val Ala Arg Pro
165 170 175

```
tac gcc gtc gag ctg atg ctc agg ctc ctc gga gtg ccg ggc cgc gac         576
Tyr Ala Val Glu Leu Met Leu Arg Leu Leu Gly Val Pro Gly Arg Asp
            180                 185                 190

cgc gcc acc gcc gcg cgg gca ctc gcc gcc tgc ggc ccc cag ctc gac         624
Arg Ala Thr Ala Ala Arg Ala Leu Ala Ala Cys Gly Pro Gln Leu Asp
        195                 200                 205

gcc cgg atg gcc ccg caa ctg ctg acc gtg gcc cgg gag tcc gcc gac         672
Ala Arg Met Ala Pro Gln Leu Leu Thr Val Ala Arg Glu Ser Ala Asp
    210                 215                 220

gcc gtc cgc aca ctg gcc gac ctg gtc ccc gag ctc gtc gcg gag aag         720
Ala Val Arg Thr Leu Ala Asp Leu Val Pro Glu Leu Val Ala Glu Lys
225                 230                 235                 240

tcc cgg ggc ctc ggg aac gcc gag ccc cgg ccc gac gac gtg ctc gcc         768
Ser Arg Gly Leu Gly Asn Ala Glu Pro Arg Pro Asp Asp Val Leu Ala
                245                 250                 255

ctc ctc ctg cac gac ggc gtc gcc ccc ggc gac gtc gag cgc atc gcg         816
Leu Leu Leu His Asp Gly Val Ala Pro Gly Asp Val Glu Arg Ile Ala
            260                 265                 270

ctg ctc ctc gcg gtc ggc gca ccc gaa ccc gtc gtc acc gcc gtc gcg         864
Leu Leu Leu Ala Val Gly Ala Pro Glu Pro Val Val Thr Ala Val Ala
        275                 280                 285

cac acg gtc cac cgg ctg ctc ggc cgg ccg ggg gag tgg gag agg gcc         912
His Thr Val His Arg Leu Leu Gly Arg Pro Gly Glu Trp Glu Arg Ala
    290                 295                 300

cgc cgg acg ccg gcc gcg gcg aac gcc gtc gac cag gtg ctg cgc gag         960
Arg Arg Thr Pro Ala Ala Ala Asn Ala Val Asp Gln Val Leu Arg Glu
305                 310                 315                 320

cgc ccc ccg gcc cgg ctg gag aac cgg gtc gcg cac acc ggc ctc gaa        1008
Arg Pro Pro Ala Arg Leu Glu Asn Arg Val Ala His Thr Gly Leu Glu
                325                 330                 335

ctc ggc ggc cgc cgg atc acc gcc gac gag cac gtc gtg gtg ctg gcc        1056
Leu Gly Gly Arg Arg Ile Thr Ala Asp Glu His Val Val Val Leu Ala
            340                 345                 350

gcc gcc gga cgg gag atc ccc ggg ccg gag ccg ctc ggg ggc gcc gac        1104
Ala Ala Gly Arg Glu Ile Pro Gly Pro Glu Pro Leu Gly Gly Ala Asp
        355                 360                 365

gga ccg cac ctg gcg ctc gcc ctc ccg ctg atc cgc ctg gcc gcc acc        1152
Gly Pro His Leu Ala Leu Ala Leu Pro Leu Ile Arg Leu Ala Ala Thr
    370                 375                 380

acc gcg gtc cag gtc acg gcc ggc cgc ctg ccc ggc ctg cgg gcc gag        1200
Thr Ala Val Gln Val Thr Ala Gly Arg Leu Pro Gly Leu Arg Ala Glu
385                 390                 395                 400

gga ccg ccc ctg acc cgg ccg cgg tca ccg gtc ctg ggc gcc tgc gcc        1248
Gly Pro Pro Leu Thr Arg Pro Arg Ser Pro Val Leu Gly Ala Cys Ala
                405                 410                 415
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cgc ctc cgg gtc cac ccg gga tga                                        1272
Arg Leu Arg Val His Pro Gly
            420


<210>  6
<211>  423
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  6

Met Pro Thr Leu Ala Thr Glu Thr Ala Pro Ala Ser Thr Ser Thr Ser
1               5                   10                  15


Ala Asp Thr Ser Thr Gly Val Arg Ala Leu Gly Arg Arg Leu Gln Leu
            20                  25                  30


Thr Arg Ala Ala His Trp Cys Ala Gly Asn Gln Gly Asp Pro Tyr Ala
        35                  40                  45


Leu Ile Leu Arg Ala Val Ala Asp Pro Glu Pro Phe Glu Arg Glu Ile
    50                  55                  60


Arg Ala Arg Gly Pro Trp Phe Arg Ser Glu Gln Leu Asp Ala Trp Val
65                  70                  75                  80


Thr Ala Asp Pro Glu Val Ala Ala Ala Val Leu Ala Asp Pro Arg Phe
                85                  90                  95


Gly Thr Leu Asp Arg Ala Gly Arg Arg Pro Asp Glu Glu Leu Leu Pro
            100                 105                 110


Leu Ala Glu Ala Phe Pro His His Glu Arg Ala Glu Leu Val Arg Leu
        115                 120                 125


Arg Ala Leu Ala Ala Pro Val Leu Ser Arg Tyr Ala Pro Ala Gln Ala
    130                 135                 140


Pro Cys Ala Ala Arg Thr Thr Ala Arg Arg Val Leu Gly Arg Leu Leu
145                 150                 155                 160


Pro Thr Gly Asp Ala Gly Phe Asp Leu Val Gly Glu Val Ala Arg Pro
                165                 170                 175


Tyr Ala Val Glu Leu Met Leu Arg Leu Leu Gly Val Pro Gly Arg Asp
            180                 185                 190


Arg Ala Thr Ala Ala Arg Ala Leu Ala Ala Cys Gly Pro Gln Leu Asp
```

```
        195                 200                 205

Ala Arg Met Ala Pro Gln Leu Leu Thr Val Ala Arg Glu Ser Ala Asp
    210                 215                 220

Ala Val Arg Thr Leu Ala Asp Leu Val Pro Glu Leu Val Ala Glu Lys
225                 230                 235                 240

Ser Arg Gly Leu Gly Asn Ala Glu Pro Arg Pro Asp Asp Val Leu Ala
                245                 250                 255

Leu Leu Leu His Asp Gly Val Ala Pro Gly Asp Val Glu Arg Ile Ala
            260                 265                 270

Leu Leu Leu Ala Val Gly Ala Pro Glu Pro Val Val Thr Ala Val Ala
        275                 280                 285

His Thr Val His Arg Leu Leu Gly Arg Pro Gly Glu Trp Glu Arg Ala
    290                 295                 300

Arg Arg Thr Pro Ala Ala Ala Asn Ala Val Asp Gln Val Leu Arg Glu
305                 310                 315                 320

Arg Pro Pro Ala Arg Leu Glu Asn Arg Val Ala His Thr Gly Leu Glu
                325                 330                 335

Leu Gly Gly Arg Arg Ile Thr Ala Asp Glu His Val Val Val Leu Ala
            340                 345                 350

Ala Ala Gly Arg Glu Ile Pro Gly Pro Glu Pro Leu Gly Gly Ala Asp
        355                 360                 365

Gly Pro His Leu Ala Leu Ala Leu Pro Leu Ile Arg Leu Ala Ala Thr
    370                 375                 380

Thr Ala Val Gln Val Thr Ala Gly Arg Leu Pro Gly Leu Arg Ala Glu
385                 390                 395                 400

Gly Pro Pro Leu Thr Arg Pro Arg Ser Pro Val Leu Gly Ala Cys Ala
                405                 410                 415

Arg Leu Arg Val His Pro Gly
            420


<210>  7
<211>  1266
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<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1266)

<400>  7
gtg cgc gtc ctg ctg aca tcc ctc gcc cac aac acc cac tac tac agt        48
Val Arg Val Leu Leu Thr Ser Leu Ala His Asn Thr His Tyr Tyr Ser
1               5                   10                  15

ctg gtg ccc ctc gcc tgg gcg ctg cgc gcc gcc ggg cac gag gta cgg        96
Leu Val Pro Leu Ala Trp Ala Leu Arg Ala Ala Gly His Glu Val Arg
            20                  25                  30

gtg gcg agc ccg ccc tcc ctc acc gac gtc atc acc tcc acc ggc ctg       144
Val Ala Ser Pro Pro Ser Leu Thr Asp Val Ile Thr Ser Thr Gly Leu
        35                  40                  45

acc gcc gta ccg gtg ggc gac gac cga ccg gcc gcg gag ctg ctc gcc       192
Thr Ala Val Pro Val Gly Asp Asp Arg Pro Ala Ala Glu Leu Leu Ala
    50                  55                  60

gag atg ggc agc gac ctc gtc ccc tac cag cgg ggc ttc gag ttc ggt       240
Glu Met Gly Ser Asp Leu Val Pro Tyr Gln Arg Gly Phe Glu Phe Gly
65                  70                  75                  80

gag gtg gag agc gag gag gag acc acc tgg gag tac ctg ctc ggc cag       288
Glu Val Glu Ser Glu Glu Glu Thr Thr Trp Glu Tyr Leu Leu Gly Gln
                85                  90                  95

cag agc atg atg gcc gcc ctg tgc ttc gcc ccg ttc aac ggc gcc gcc       336
Gln Ser Met Met Ala Ala Leu Cys Phe Ala Pro Phe Asn Gly Ala Ala
            100                 105                 110

acg atg gac gag atc gtc gac ttc gcc cgt ggc tgg cgg ccc gac ctg       384
Thr Met Asp Glu Ile Val Asp Phe Ala Arg Gly Trp Arg Pro Asp Leu
        115                 120                 125

gtc gtg tgg gaa ccc tgg acc tac gcg ggg ccg gtc gcg gcc cgc gcc       432
Val Val Trp Glu Pro Trp Thr Tyr Ala Gly Pro Val Ala Ala Arg Ala
    130                 135                 140

tgc ggt gcc gcc cac gcg cgc atc ctg tgg ggc ccc gac gcc atc gga       480
Cys Gly Ala Ala His Ala Arg Ile Leu Trp Gly Pro Asp Ala Ile Gly
145                 150                 155                 160

cgc tcc cgc ctg cgc ttc ctc gcc gcc ctc gac ggg atg ccg gag gaa       528
Arg Ser Arg Leu Arg Phe Leu Ala Ala Leu Asp Gly Met Pro Glu Glu
                165                 170                 175

ctg cgc gag gac ccc atc gcc gaa tgg ctc ggc tgg acg ctg gac cgg       576
Leu Arg Glu Asp Pro Ile Ala Glu Trp Leu Gly Trp Thr Leu Asp Arg
            180                 185                 190

tac ggg ctc gcc ttc gac gaa cgc gac gtg ctc ggc cac tgg gtg atc       624
Tyr Gly Leu Ala Phe Asp Glu Arg Asp Val Leu Gly His Trp Val Ile
        195                 200                 205
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gac ccg ggc ccg cgc agc acc cgc ctc gac ctg ggc cag acc acg gtg         672
Asp Pro Gly Pro Arg Ser Thr Arg Leu Asp Leu Gly Gln Thr Thr Val
    210                 215                 220

ccc atg tgc tac gtg ccc tac aac ggg cgc tcc gtg atc gaa ccc tgg         720
Pro Met Cys Tyr Val Pro Tyr Asn Gly Arg Ser Val Ile Glu Pro Trp
225                 230                 235                 240

ctc ggc aag aag ccc gac cgc ccc cgc gtc tgc ctc acc ctc ggc gtg         768
Leu Gly Lys Lys Pro Asp Arg Pro Arg Val Cys Leu Thr Leu Gly Val
                245                 250                 255

tcc gcc cgc gag acc tac ggc cgc gac gcg gtc tcc tac tcc gaa ctg         816
Ser Ala Arg Glu Thr Tyr Gly Arg Asp Ala Val Ser Tyr Ser Glu Leu
            260                 265                 270

ctg gag gcg ctc ggc cgg ctg gac atc gag gtg gtg gcc acc ctg gac         864
Leu Glu Ala Leu Gly Arg Leu Asp Ile Glu Val Val Ala Thr Leu Asp
        275                 280                 285

acc tcc cag ctc gac cgc ctg ggc acc ctc ccc gac aac gtc gtg ccc         912
Thr Ser Gln Leu Asp Arg Leu Gly Thr Leu Pro Asp Asn Val Val Pro
    290                 295                 300

gtg gac ttc gta ccg ctc gac gcg ctg ctg ccg agc tgc gcc gcg atc         960
Val Asp Phe Val Pro Leu Asp Ala Leu Leu Pro Ser Cys Ala Ala Ile
305                 310                 315                 320

atc cac cac ggc gga gcg ggc acc tgg tcc acc gcc ctg cgc cac gga        1008
Ile His His Gly Gly Ala Gly Thr Trp Ser Thr Ala Leu Arg His Gly
                325                 330                 335

gtg ccg cag atc ctg ctg ccc tcc ctg tgg gac gcg ccg ctc aag gcg        1056
Val Pro Gln Ile Leu Leu Pro Ser Leu Trp Asp Ala Pro Leu Lys Ala
            340                 345                 350

cag caa ctc cag cgc ctg tcc gcc ggg ttc gac ctg ccc gcg gcg acg        1104
Gln Gln Leu Gln Arg Leu Ser Ala Gly Phe Asp Leu Pro Ala Ala Thr
        355                 360                 365

ctc acg gcg cgc ggt ctg gcc gac gcg gtg cac acg gcc gtg cac gac        1152
Leu Thr Ala Arg Gly Leu Ala Asp Ala Val His Thr Ala Val His Asp
    370                 375                 380

ccc gcg atc agg gcg ggc gcg cgg cgg ctg agc gag gag atg ctc gcc        1200
Pro Ala Ile Arg Ala Gly Ala Arg Arg Leu Ser Glu Glu Met Leu Ala
385                 390                 395                 400

gac ccc acg ccc gcc ggg atc atc ccc acc ctg gag cgc ctc acc gcc        1248
Asp Pro Thr Pro Ala Gly Ile Ile Pro Thr Leu Glu Arg Leu Thr Ala
                405                 410                 415

ctg cac cgg gcc acc tga                                                1266
Leu His Arg Ala Thr
            420


<210>  8
<211>  421
<212>  PRT
<213>  Streptomyces ambofaciens
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<400>  8

Val Arg Val Leu Leu Thr Ser Leu Ala His Asn Thr His Tyr Tyr Ser
1               5                   10                  15

Leu Val Pro Leu Ala Trp Ala Leu Arg Ala Ala Gly His Glu Val Arg
            20                  25                  30

Val Ala Ser Pro Pro Ser Leu Thr Asp Val Ile Thr Ser Thr Gly Leu
        35                  40                  45

Thr Ala Val Pro Val Gly Asp Asp Arg Pro Ala Ala Glu Leu Leu Ala
    50                  55                  60

Glu Met Gly Ser Asp Leu Val Pro Tyr Gln Arg Gly Phe Glu Phe Gly
65                  70                  75                  80

Glu Val Glu Ser Glu Glu Glu Thr Thr Trp Glu Tyr Leu Leu Gly Gln
                85                  90                  95

Gln Ser Met Met Ala Ala Leu Cys Phe Ala Pro Phe Asn Gly Ala Ala
            100                 105                 110

Thr Met Asp Glu Ile Val Asp Phe Ala Arg Gly Trp Arg Pro Asp Leu
        115                 120                 125

Val Val Trp Glu Pro Trp Thr Tyr Ala Gly Pro Val Ala Ala Arg Ala
    130                 135                 140

Cys Gly Ala Ala His Ala Arg Ile Leu Trp Gly Pro Asp Ala Ile Gly
145                 150                 155                 160

Arg Ser Arg Leu Arg Phe Leu Ala Ala Leu Asp Gly Met Pro Glu Glu
                165                 170                 175

Leu Arg Glu Asp Pro Ile Ala Glu Trp Leu Gly Trp Thr Leu Asp Arg
            180                 185                 190

Tyr Gly Leu Ala Phe Asp Glu Arg Asp Val Leu Gly His Trp Val Ile
        195                 200                 205

Asp Pro Gly Pro Arg Ser Thr Arg Leu Asp Leu Gly Gln Thr Thr Val
    210                 215                 220

Pro Met Cys Tyr Val Pro Tyr Asn Gly Arg Ser Val Ile Glu Pro Trp
225                 230                 235                 240
```

```
Leu Gly Lys Lys Pro Asp Arg Pro Arg Val Cys Leu Thr Leu Gly Val
                245                 250                 255

Ser Ala Arg Glu Thr Tyr Gly Arg Asp Ala Val Ser Tyr Ser Glu Leu
            260                 265                 270

Leu Glu Ala Leu Gly Arg Leu Asp Ile Glu Val Val Ala Thr Leu Asp
        275                 280                 285

Thr Ser Gln Leu Asp Arg Leu Gly Thr Leu Pro Asp Asn Val Val Pro
    290                 295                 300

Val Asp Phe Val Pro Leu Asp Ala Leu Leu Pro Ser Cys Ala Ala Ile
305                 310                 315                 320

Ile His His Gly Gly Ala Gly Thr Trp Ser Thr Ala Leu Arg His Gly
                325                 330                 335

Val Pro Gln Ile Leu Leu Pro Ser Leu Trp Asp Ala Pro Leu Lys Ala
            340                 345                 350

Gln Gln Leu Gln Arg Leu Ser Ala Gly Phe Asp Leu Pro Ala Ala Thr
        355                 360                 365

Leu Thr Ala Arg Gly Leu Ala Asp Ala Val His Thr Ala Val His Asp
    370                 375                 380

Pro Ala Ile Arg Ala Gly Ala Arg Arg Leu Ser Glu Glu Met Leu Ala
385                 390                 395                 400

Asp Pro Thr Pro Ala Gly Ile Ile Pro Thr Leu Glu Arg Leu Thr Ala
                405                 410                 415

Leu His Arg Ala Thr
            420


<210>  9
<211>  1350
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1350)

<400>  9
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atg ccc gaa agc cat gcg cag agc gcg ctg ctc gcc gcg atc acc gcc       48
Met Pro Glu Ser His Ala Gln Ser Ala Leu Leu Ala Ala Ile Thr Ala
1               5                   10                  15

gcg gac cgc acc ccc gag gac atc gcg gcg ctg ccc ctg ccc gag tcc       96
Ala Asp Arg Thr Pro Glu Asp Ile Ala Ala Leu Pro Leu Pro Glu Ser
            20                  25                  30

ttc cgc gcc gtg acc gtc cgc aaa gag gac acc gac atg ttc cgc ggg      144
Phe Arg Ala Val Thr Val Arg Lys Glu Asp Thr Asp Met Phe Arg Gly
        35                  40                  45

atg ccg agc gcg gac aag gac ccg cgc aag tcc ctg cac gtc gac gag      192
Met Pro Ser Ala Asp Lys Asp Pro Arg Lys Ser Leu His Val Asp Glu
    50                  55                  60

gtg ccg ctg ccc gaa gtg ggg ccc ggg gag gcg ctg gtc gcg gtg atg      240
Val Pro Leu Pro Glu Val Gly Pro Gly Glu Ala Leu Val Ala Val Met
65                  70                  75                  80

gcc agc tcc gtc aac tac aac acg gtc tgg tcc tcc atc ttc gag ccc      288
Ala Ser Ser Val Asn Tyr Asn Thr Val Trp Ser Ser Ile Phe Glu Pro
                85                  90                  95

ctc ccg acg ttc ggc ttc ctg gag cgc tac ggg cgc acc tcg ccg ctg      336
Leu Pro Thr Phe Gly Phe Leu Glu Arg Tyr Gly Arg Thr Ser Pro Leu
            100                 105                 110

gcc gcg cgc cac gac ctg ccg tac cac atc ctc ggt tcc gac ctg tcc      384
Ala Ala Arg His Asp Leu Pro Tyr His Ile Leu Gly Ser Asp Leu Ser
        115                 120                 125

ggc gtg gtg ctg cgc acg gga ccc ggc gtg aac gtc tgg aaa ccc ggt      432
Gly Val Val Leu Arg Thr Gly Pro Gly Val Asn Val Trp Lys Pro Gly
    130                 135                 140

gac gag gtc gtc gcg cac tgt ctg tcg gtg gag ctg gag agc ccc gac      480
Asp Glu Val Val Ala His Cys Leu Ser Val Glu Leu Glu Ser Pro Asp
145                 150                 155                 160

ggg cac gac gac acc atg ctc gac ccg gcc cag cgc atc tgg ggc ttc      528
Gly His Asp Asp Thr Met Leu Asp Pro Ala Gln Arg Ile Trp Gly Phe
                165                 170                 175

gag acc aac ttc ggg ggc ctg gcc gag gtg gcc ctc gtc aag tcc aac      576
Glu Thr Asn Phe Gly Gly Leu Ala Glu Val Ala Leu Val Lys Ser Asn
            180                 185                 190

cag ctg atg ccc aag gcg gcc cat ctg acc tgg gag gag gcc gcc gcg      624
Gln Leu Met Pro Lys Ala Ala His Leu Thr Trp Glu Glu Ala Ala Ala
        195                 200                 205

ccc ggt ctg gtc aac tcc acc gcc tac cgc cag ctg gtc tcc cgc aac      672
Pro Gly Leu Val Asn Ser Thr Ala Tyr Arg Gln Leu Val Ser Arg Asn
    210                 215                 220

ggc gcc ggc atg aag cag ggc gac aac gtg ctg atc tgg ggc gcc agc      720
Gly Ala Gly Met Lys Gln Gly Asp Asn Val Leu Ile Trp Gly Ala Ser
225                 230                 235                 240

ggc ggc ctg ggc tcg tac gcc acc cag ctg gcc ctc gcc ggc ggg gcc      768
```

```
Gly Gly Leu Gly Ser Tyr Ala Thr Gln Leu Ala Leu Ala Gly Gly Ala
                245                 250                 255

cac ccc gtc tgc gtg gtc tcc agc gcg cgc aag gcc gag gtg tgc cgg      816
His Pro Val Cys Val Val Ser Ser Ala Arg Lys Ala Glu Val Cys Arg
            260                 265                 270

gcc atg ggc gcg gag gcc atc atc gac cgc tcc gcc gag gac tac cgc      864
Ala Met Gly Ala Glu Ala Ile Ile Asp Arg Ser Ala Glu Asp Tyr Arg
        275                 280                 285

ttc tgg agc gac gag gac acc cag gac ccg cgg gag tgg aag cgc ttc      912
Phe Trp Ser Asp Glu Asp Thr Gln Asp Pro Arg Glu Trp Lys Arg Phe
    290                 295                 300

ggc aag cgc atc cgc gag gtc acc ggg ggc gag gac gtc gac atc gtc      960
Gly Lys Arg Ile Arg Glu Val Thr Gly Gly Glu Asp Val Asp Ile Val
305                 310                 315                 320

ttc gag cac ccc ggc cgg gag acc ttc ggg gcg tcc gtc tac gtc acc     1008
Phe Glu His Pro Gly Arg Glu Thr Phe Gly Ala Ser Val Tyr Val Thr
                325                 330                 335

cgc agg ggc ggc acg atc gtc acc tgc gcc tcc acc tcg ggc ttc cgc     1056
Arg Arg Gly Gly Thr Ile Val Thr Cys Ala Ser Thr Ser Gly Phe Arg
            340                 345                 350

cac gag ttc gac aac cgc tac ctc tgg atg cac ctc aag cgt atc gtc     1104
His Glu Phe Asp Asn Arg Tyr Leu Trp Met His Leu Lys Arg Ile Val
        355                 360                 365

ggc acc cac ttc gcc aac tac cgc gag gcg tgg gag gcg aac cgg ctc     1152
Gly Thr His Phe Ala Asn Tyr Arg Glu Ala Trp Glu Ala Asn Arg Leu
    370                 375                 380

gtc gcc aag ggg agg atc cac ccc acc ctc tcg cgc acc tac ccg ctg     1200
Val Ala Lys Gly Arg Ile His Pro Thr Leu Ser Arg Thr Tyr Pro Leu
385                 390                 395                 400

gcc gac acg gcg gtt gcc gtg cac gac gtg cac ggc aac cag cac cag     1248
Ala Asp Thr Ala Val Ala Val His Asp Val His Gly Asn Gln His Gln
                405                 410                 415

ggc aag gtc ggc gtg ctc tgc ctg gcg ccc acg gag ggg ctg ggc gtg     1296
Gly Lys Val Gly Val Leu Cys Leu Ala Pro Thr Glu Gly Leu Gly Val
            420                 425                 430

cgc gac gag gag aag cgg gcg cgg cac atc gac gcg atc aac cgg ttc     1344
Arg Asp Glu Glu Lys Arg Ala Arg His Ile Asp Ala Ile Asn Arg Phe
        435                 440                 445

cgc tga                                                             1350
Arg


<210>  10
<211>  449
<212>  PRT
<213>  Streptomyces ambofaciens
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<400> 10

Met Pro Glu Ser His Ala Gln Ser Ala Leu Leu Ala Ala Ile Thr Ala
1 5 10 15

Ala Asp Arg Thr Pro Glu Asp Ile Ala Ala Leu Pro Leu Pro Glu Ser
20 25 30

Phe Arg Ala Val Thr Val Arg Lys Glu Asp Thr Asp Met Phe Arg Gly
35 40 45

Met Pro Ser Ala Asp Lys Asp Pro Arg Lys Ser Leu His Val Asp Glu
50 55 60

Val Pro Leu Pro Glu Val Gly Pro Gly Glu Ala Leu Val Ala Val Met
65 70 75 80

Ala Ser Ser Val Asn Tyr Asn Thr Val Trp Ser Ser Ile Phe Glu Pro
85 90 95

Leu Pro Thr Phe Gly Phe Leu Glu Arg Tyr Gly Arg Thr Ser Pro Leu
100 105 110

Ala Ala Arg His Asp Leu Pro Tyr His Ile Leu Gly Ser Asp Leu Ser
115 120 125

Gly Val Val Leu Arg Thr Gly Pro Gly Val Asn Val Trp Lys Pro Gly
130 135 140

Asp Glu Val Val Ala His Cys Leu Ser Val Glu Leu Glu Ser Pro Asp
145 150 155 160

Gly His Asp Asp Thr Met Leu Asp Pro Ala Gln Arg Ile Trp Gly Phe
165 170 175

Glu Thr Asn Phe Gly Gly Leu Ala Glu Val Ala Leu Val Lys Ser Asn
180 185 190

Gln Leu Met Pro Lys Ala Ala His Leu Thr Trp Glu Glu Ala Ala Ala
195 200 205

Pro Gly Leu Val Asn Ser Thr Ala Tyr Arg Gln Leu Val Ser Arg Asn
210 215 220

Gly Ala Gly Met Lys Gln Gly Asp Asn Val Leu Ile Trp Gly Ala Ser
225 230 235 240

```
Gly Gly Leu Gly Ser Tyr Ala Thr Gln Leu Ala Leu Ala Gly Gly Ala
                245                 250                 255

His Pro Val Cys Val Val Ser Ser Ala Arg Lys Ala Glu Val Cys Arg
            260                 265                 270

Ala Met Gly Ala Glu Ala Ile Ile Asp Arg Ser Ala Glu Asp Tyr Arg
        275                 280                 285

Phe Trp Ser Asp Glu Asp Thr Gln Asp Pro Arg Glu Trp Lys Arg Phe
    290                 295                 300

Gly Lys Arg Ile Arg Glu Val Thr Gly Gly Glu Asp Val Asp Ile Val
305                 310                 315                 320

Phe Glu His Pro Gly Arg Glu Thr Phe Gly Ala Ser Val Tyr Val Thr
                325                 330                 335

Arg Arg Gly Gly Thr Ile Val Thr Cys Ala Ser Thr Ser Gly Phe Arg
            340                 345                 350

His Glu Phe Asp Asn Arg Tyr Leu Trp Met His Leu Lys Arg Ile Val
        355                 360                 365

Gly Thr His Phe Ala Asn Tyr Arg Glu Ala Trp Glu Ala Asn Arg Leu
    370                 375                 380

Val Ala Lys Gly Arg Ile His Pro Thr Leu Ser Arg Thr Tyr Pro Leu
385                 390                 395                 400

Ala Asp Thr Ala Val Ala Val His Asp Val His Gly Asn Gln His Gln
                405                 410                 415

Gly Lys Val Gly Val Leu Cys Leu Ala Pro Thr Glu Gly Leu Gly Val
            420                 425                 430

Arg Asp Glu Glu Lys Arg Ala Arg His Ile Asp Ala Ile Asn Arg Phe
        435                 440                 445

Arg


<210>  11
<211>  675
<212>  DNA
<213>  Streptomyces ambofaciens
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<220>
<221>  CDS
<222>  (1)..(675)

<400>  11
atg atg agc gtg gca gac cag acg gct ctc agc ccc gcg ctg ctg gag       48
Met Met Ser Val Ala Asp Gln Thr Ala Leu Ser Pro Ala Leu Leu Glu
1               5                   10                  15

tac gcc cgg agc gtc gcg ctg cgg gac gac ggc ctg ctg cgc gaa ctg       96
Tyr Ala Arg Ser Val Ala Leu Arg Asp Asp Gly Leu Leu Arg Glu Leu
            20                  25                  30

cac gag gtg acc gcc ggg ctc ccc ggc ggc cgg gcc atg cag atc atg      144
His Glu Val Thr Ala Gly Leu Pro Gly Gly Arg Ala Met Gln Ile Met
        35                  40                  45

ccc gag gag gcg cag ttc ctc gcc ctg ctg atc cgg ctc gtc ggt gcc      192
Pro Glu Glu Ala Gln Phe Leu Ala Leu Leu Ile Arg Leu Val Gly Ala
    50                  55                  60

cgg cgg gtg ctg gag atc ggc acc ttc acg ggg tac agc acg ctg tgc      240
Arg Arg Val Leu Glu Ile Gly Thr Phe Thr Gly Tyr Ser Thr Leu Cys
65                  70                  75                  80

atg gcg cgg gca ctg ccc gcc gac ggc acc gtc gtc acc tgc gac atc      288
Met Ala Arg Ala Leu Pro Ala Asp Gly Thr Val Val Thr Cys Asp Ile
                85                  90                  95

agc gac agg tgg ccc ggc gtc ggc gca ccg tac tgg cgc cgg gcc ggg      336
Ser Asp Arg Trp Pro Gly Val Gly Ala Pro Tyr Trp Arg Arg Ala Gly
            100                 105                 110

gtg gag tcc cgg atc gac ctg cgc gtc ggc gac gcc gtc cgg acc ctc      384
Val Glu Ser Arg Ile Asp Leu Arg Val Gly Asp Ala Val Arg Thr Leu
        115                 120                 125

gcc gag ctc cgc gag cac gag ggg gac ggc tcg ttc gac ctg gtc ttc      432
Ala Glu Leu Arg Glu His Glu Gly Asp Gly Ser Phe Asp Leu Val Phe
    130                 135                 140

gtc gac gcc gac aag acc ggg tac ccg cac tac tac gag cag gcg ctg      480
Val Asp Ala Asp Lys Thr Gly Tyr Pro His Tyr Tyr Glu Gln Ala Leu
145                 150                 155                 160

gcc ctg gta cgc ccc ggc gga ctg gtg gcg gtc gac aac acc ctg ttc      528
Ala Leu Val Arg Pro Gly Gly Leu Val Ala Val Asp Asn Thr Leu Phe
                165                 170                 175

ttc ggc cgg gtg gcc gac ccg gcc gtc gag gac gcc gac acc gtc gcc      576
Phe Gly Arg Val Ala Asp Pro Ala Val Glu Asp Ala Asp Thr Val Ala
            180                 185                 190

gtg cgc gcg ctc aac gag ctg ctg cgc gac gac gaa cgc gtg gac atc      624
Val Arg Ala Leu Asn Glu Leu Leu Arg Asp Asp Glu Arg Val Asp Ile
        195                 200                 205

gcc ctg ctg acg gtc gcc gac ggg atc act ctg gcc cgc cgg cgg gag      672
Ala Leu Leu Thr Val Ala Asp Gly Ile Thr Leu Ala Arg Arg Arg Glu
```

```
    210                 215                 220

tga                                                                     675


<210>  12
<211>  224
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  12

Met Met Ser Val Ala Asp Gln Thr Ala Leu Ser Pro Ala Leu Leu Glu
1               5                   10                  15


Tyr Ala Arg Ser Val Ala Leu Arg Asp Asp Gly Leu Leu Arg Glu Leu
            20                  25                  30


His Glu Val Thr Ala Gly Leu Pro Gly Gly Arg Ala Met Gln Ile Met
        35                  40                  45


Pro Glu Glu Ala Gln Phe Leu Ala Leu Leu Ile Arg Leu Val Gly Ala
    50                  55                  60


Arg Arg Val Leu Glu Ile Gly Thr Phe Thr Gly Tyr Ser Thr Leu Cys
65                  70                  75                  80


Met Ala Arg Ala Leu Pro Ala Asp Gly Thr Val Val Thr Cys Asp Ile
                85                  90                  95


Ser Asp Arg Trp Pro Gly Val Gly Ala Pro Tyr Trp Arg Arg Ala Gly
            100                 105                 110


Val Glu Ser Arg Ile Asp Leu Arg Val Gly Asp Ala Val Arg Thr Leu
        115                 120                 125


Ala Glu Leu Arg Glu His Glu Gly Asp Gly Ser Phe Asp Leu Val Phe
    130                 135                 140


Val Asp Ala Asp Lys Thr Gly Tyr Pro His Tyr Tyr Glu Gln Ala Leu
145                 150                 155                 160


Ala Leu Val Arg Pro Gly Gly Leu Val Ala Val Asp Asn Thr Leu Phe
                165                 170                 175


Phe Gly Arg Val Ala Asp Pro Ala Val Glu Asp Ala Asp Thr Val Ala
            180                 185                 190


Val Arg Ala Leu Asn Glu Leu Leu Arg Asp Asp Glu Arg Val Asp Ile
```

```
        195                 200                 205

Ala Leu Leu Thr Val Ala Asp Gly Ile Thr Leu Ala Arg Arg Arg Glu
    210                 215                 220


<210>  13
<211>  1245
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1245)

<400>  13
gtg ctc cag cgc gtc gat ctg tcg tca ctc acc ggc ctc cgc tgg tat           48
Val Leu Gln Arg Val Asp Leu Ser Ser Leu Thr Gly Leu Arg Trp Tyr
1               5                   10                  15

gcg gcg ctg acg gta ttc gcc tgt cac atc gcc cag cag ggc ttc ttc           96
Ala Ala Leu Thr Val Phe Ala Cys His Ile Ala Gln Gln Gly Phe Phe
            20                  25                  30

gcc gac cag cag gtg ggc agc gca ctg ctg cac atc acc ccg ctc ggt          144
Ala Asp Gln Gln Val Gly Ser Ala Leu Leu His Ile Thr Pro Leu Gly
        35                  40                  45

tcc atg gcg gtc tcg atc ttc ttc ata ctg agt gga ttc gtc ctc gcc          192
Ser Met Ala Val Ser Ile Phe Phe Ile Leu Ser Gly Phe Val Leu Ala
    50                  55                  60

tgg tcg gcc cgc gac gag gac tcc gtg ccg act ttc tgg cgg cgc cgc          240
Trp Ser Ala Arg Asp Glu Asp Ser Val Pro Thr Phe Trp Arg Arg Arg
65                  70                  75                  80

atc gcg aag atc tat ccg ctg cat ctc gcg acg ttc ggc atc gcg gct          288
Ile Ala Lys Ile Tyr Pro Leu His Leu Ala Thr Phe Gly Ile Ala Ala
                85                  90                  95

ctc atc att ttc tcc ctg tcg gag ccg gta ctt ccc ggc ggt tcc gta          336
Leu Ile Ile Phe Ser Leu Ser Glu Pro Val Leu Pro Gly Gly Ser Val
            100                 105                 110

tgg gac ggg ctg gtg ccc aat gtt ctg ctc gtg cag tcc tgg ctt ccc          384
Trp Asp Gly Leu Val Pro Asn Val Leu Leu Val Gln Ser Trp Leu Pro
        115                 120                 125

gac gcg acc ctc acg gcc agt ttc aac acg ccc agc tgg tcg ctc tcc          432
Asp Ala Thr Leu Thr Ala Ser Phe Asn Thr Pro Ser Trp Ser Leu Ser
    130                 135                 140

tgt gag atc gcc ttc tat ctg tcg ttc ccg ctg tgg tac cgg ctg gtg          480
Cys Glu Ile Ala Phe Tyr Leu Ser Phe Pro Leu Trp Tyr Arg Leu Val
145                 150                 155                 160

cgc agg att ccc gca cgg cgg ctg tgg tgg tgc gcc gcg ggg atc gcc          528
Arg Arg Ile Pro Ala Arg Arg Leu Trp Trp Cys Ala Ala Gly Ile Ala
                165                 170                 175
```

```
gtg gcc gtg acg tgt gtg ccc ctg ctg gcg ggc ctg ctc ccg gcg agc        576
Val Ala Val Thr Cys Val Pro Leu Leu Ala Gly Leu Leu Pro Ala Ser
            180                 185                 190

gag gag gtg gcc ccc ggg atg tcg ctc aac gag gtc tgg ttc gcg tac        624
Glu Glu Val Ala Pro Gly Met Ser Leu Asn Glu Val Trp Phe Ala Tyr
        195                 200                 205

tgg ctt ccg ccg gtg cgc atg ctg gag ttc gtc ctc ggc atc gtg atg        672
Trp Leu Pro Pro Val Arg Met Leu Glu Phe Val Leu Gly Ile Val Met
    210                 215                 220

gcg ctg atc ctg cgc gcg ggg atc tgg aag ggc ccc ggt ccg gcg gtc        720
Ala Leu Ile Leu Arg Ala Gly Ile Trp Lys Gly Pro Gly Pro Ala Val
225                 230                 235                 240

tgc acg gcg ctc ctc gcc gcg agt tac ggc ctc acc cag atg gtg ccc        768
Cys Thr Ala Leu Leu Ala Ala Ser Tyr Gly Leu Thr Gln Met Val Pro
                245                 250                 255

ccg atc ttc acc ctc gtc gcc tgc tcc gtc gta ccg gcc gcg ctg ctg        816
Pro Ile Phe Thr Leu Val Ala Cys Ser Val Val Pro Ala Ala Leu Leu
            260                 265                 270

atc acg gcg ctg gcc gac gcc gac gtg cac ggc cgg cgc acg ggg ctg        864
Ile Thr Ala Leu Ala Asp Ala Asp Val His Gly Arg Arg Thr Gly Leu
        275                 280                 285

cgt tcg gcg acg ctg gtg cgg ctg ggc cag tgg tcc ttc gcc ttc tac        912
Arg Ser Ala Thr Leu Val Arg Leu Gly Gln Trp Ser Phe Ala Phe Tyr
    290                 295                 300

ctg gtc cac ttc ctg atc atc cgc tac gga cac cgg ctg atg ggc ggc        960
Leu Val His Phe Leu Ile Ile Arg Tyr Gly His Arg Leu Met Gly Gly
305                 310                 315                 320

gat ctg ggc tac gag cgg cag tgg agc acc ccg gcc gcg atc gcg ctg       1008
Asp Leu Gly Tyr Glu Arg Gln Trp Ser Thr Pro Ala Ala Ile Ala Leu
                325                 330                 335

tcc ctg ggg atg ctg ggg gtg gcg gtc ctg gcc ggc ggt ctg ctg cac       1056
Ser Leu Gly Met Leu Gly Val Ala Val Leu Ala Gly Gly Leu Leu His
            340                 345                 350

acc gtc gtc gaa cag ccc tgc atg cgc ctg ttc ggc agc cgc agg tcc       1104
Thr Val Val Glu Gln Pro Cys Met Arg Leu Phe Gly Ser Arg Arg Ser
        355                 360                 365

gcc tcc cgt ccg aag ccc ggc gcc acc gcg gct ccc cgg aac tca ccc       1152
Ala Ser Arg Pro Lys Pro Gly Ala Thr Ala Ala Pro Arg Asn Ser Pro
    370                 375                 380

gcg gcc gac gcg gcc ggc gtg ccc ctg ctc ccg ggc gta ccc ggg ccc       1200
Ala Ala Asp Ala Ala Gly Val Pro Leu Leu Pro Gly Val Pro Gly Pro
385                 390                 395                 400

gcg cac acc ccc gca gcg acg aac gaa ccc acc ccg aga gga tga           1245
Ala His Thr Pro Ala Ala Thr Asn Glu Pro Thr Pro Arg Gly
                405                 410
```

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<210>  14
<211>  414
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  14

Val Leu Gln Arg Val Asp Leu Ser Ser Leu Thr Gly Leu Arg Trp Tyr
1               5                   10                  15

Ala Ala Leu Thr Val Phe Ala Cys His Ile Ala Gln Gln Gly Phe Phe
            20                  25                  30

Ala Asp Gln Gln Val Gly Ser Ala Leu Leu His Ile Thr Pro Leu Gly
        35                  40                  45

Ser Met Ala Val Ser Ile Phe Phe Ile Leu Ser Gly Phe Val Leu Ala
    50                  55                  60

Trp Ser Ala Arg Asp Glu Asp Ser Val Pro Thr Phe Trp Arg Arg Arg
65                  70                  75                  80

Ile Ala Lys Ile Tyr Pro Leu His Leu Ala Thr Phe Gly Ile Ala Ala
                85                  90                  95

Leu Ile Ile Phe Ser Leu Ser Glu Pro Val Leu Pro Gly Gly Ser Val
            100                 105                 110

Trp Asp Gly Leu Val Pro Asn Val Leu Leu Val Gln Ser Trp Leu Pro
        115                 120                 125

Asp Ala Thr Leu Thr Ala Ser Phe Asn Thr Pro Ser Trp Ser Leu Ser
    130                 135                 140

Cys Glu Ile Ala Phe Tyr Leu Ser Phe Pro Leu Trp Tyr Arg Leu Val
145                 150                 155                 160

Arg Arg Ile Pro Ala Arg Arg Leu Trp Trp Cys Ala Ala Gly Ile Ala
                165                 170                 175

Val Ala Val Thr Cys Val Pro Leu Leu Ala Gly Leu Leu Pro Ala Ser
            180                 185                 190

Glu Glu Val Ala Pro Gly Met Ser Leu Asn Glu Val Trp Phe Ala Tyr
        195                 200                 205

Trp Leu Pro Pro Val Arg Met Leu Glu Phe Val Leu Gly Ile Val Met
```

```
    210                 215                 220

Ala Leu Ile Leu Arg Ala Gly Ile Trp Lys Gly Pro Gly Pro Ala Val
225                 230                 235                 240

Cys Thr Ala Leu Leu Ala Ala Ser Tyr Gly Leu Thr Gln Met Val Pro
                245                 250                 255

Pro Ile Phe Thr Leu Val Ala Cys Ser Val Val Pro Ala Ala Leu Leu
            260                 265                 270

Ile Thr Ala Leu Ala Asp Ala Asp Val His Gly Arg Arg Thr Gly Leu
        275                 280                 285

Arg Ser Ala Thr Leu Val Arg Leu Gly Gln Trp Ser Phe Ala Phe Tyr
    290                 295                 300

Leu Val His Phe Leu Ile Ile Arg Tyr Gly His Arg Leu Met Gly Gly
305                 310                 315                 320

Asp Leu Gly Tyr Glu Arg Gln Trp Ser Thr Pro Ala Ala Ile Ala Leu
                325                 330                 335

Ser Leu Gly Met Leu Gly Val Ala Val Leu Ala Gly Gly Leu Leu His
            340                 345                 350

Thr Val Val Glu Gln Pro Cys Met Arg Leu Phe Gly Ser Arg Arg Ser
        355                 360                 365

Ala Ser Arg Pro Lys Pro Gly Ala Thr Ala Ala Pro Arg Asn Ser Pro
    370                 375                 380

Ala Ala Asp Ala Ala Gly Val Pro Leu Leu Pro Gly Val Pro Gly Pro
385                 390                 395                 400

Ala His Thr Pro Ala Ala Thr Asn Glu Pro Thr Pro Arg Gly
                405                 410


<210>  15
<211>  849
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(849)
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<400>  15
gtg aca ttg aaa tcc cca ctg cca ccg caa tcc gtc tcc gca ccc gct        48
Val Thr Leu Lys Ser Pro Leu Pro Pro Gln Ser Val Ser Ala Pro Ala
1               5                   10                  15

gat tca cgc agc acc gcg cgg aga gaa tgg ggt cag aac ttc ttt cgt        96
Asp Ser Arg Ser Thr Ala Arg Arg Glu Trp Gly Gln Asn Phe Phe Arg
            20                  25                  30

aca gcc gcc gcg gcc tgt cgt ttc tcc gct cag ctg gac ggt tcg gac       144
Thr Ala Ala Ala Ala Cys Arg Phe Ser Ala Gln Leu Asp Gly Ser Asp
        35                  40                  45

acc att ccg ccc gat tct ccg aat gac ctg atg acc gtc gaa ata ggc       192
Thr Ile Pro Pro Asp Ser Pro Asn Asp Leu Met Thr Val Glu Ile Gly
    50                  55                  60

gcg gga tca ggg cgg gtg acc aaa gtg ctc gcc tca ccc ggg acg cct       240
Ala Gly Ser Gly Arg Val Thr Lys Val Leu Ala Ser Pro Gly Thr Pro
65                  70                  75                  80

tta ctc gcg gtg gaa ata gat ccc cgc tgg gct cgg cgg ctg gcc gcc       288
Leu Leu Ala Val Glu Ile Asp Pro Arg Trp Ala Arg Arg Leu Ala Ala
                85                  90                  95

gaa tcg ctg ccg gac gtc acg gtg gtg aac gag gat ttc ctg acc ctg       336
Glu Ser Leu Pro Asp Val Thr Val Val Asn Glu Asp Phe Leu Thr Leu
            100                 105                 110

caa ctg ccc ggg cag ccg gtc aga ctc atc ggg aat ctt ccc ttc gtc       384
Gln Leu Pro Gly Gln Pro Val Arg Leu Ile Gly Asn Leu Pro Phe Val
        115                 120                 125

acc ggc acc aga atg ctg agg cgc tgc ctc gac atg ggt ccg gcg cgc       432
Thr Gly Thr Arg Met Leu Arg Arg Cys Leu Asp Met Gly Pro Ala Arg
    130                 135                 140

atg cgg cag ggc gtg ttc ctg ttg cag cgg gag tac gtg gga aag cgg       480
Met Arg Gln Gly Val Phe Leu Leu Gln Arg Glu Tyr Val Gly Lys Arg
145                 150                 155                 160

acc gga gcc tgg ggc gga aac ctc ttc aac gcc cag tgg gag ccg tgg       528
Thr Gly Ala Trp Gly Gly Asn Leu Phe Asn Ala Gln Trp Glu Pro Trp
                165                 170                 175

tac tcg ttc gac cgg ggc ctg gcc ttc tca cgc cag gac ttc acc ccc       576
Tyr Ser Phe Asp Arg Gly Leu Ala Phe Ser Arg Gln Asp Phe Thr Pro
            180                 185                 190

gta ccg cgc gcg gac acc cag acc ctg atg gtc gcc ccg cac cgc agg       624
Val Pro Arg Ala Asp Thr Gln Thr Leu Met Val Ala Pro His Arg Arg
        195                 200                 205

ccg tcc gtg ccc tgg cgt gag aag gcc gcc tac cag cgg ttc gtc caa       672
Pro Ser Val Pro Trp Arg Glu Lys Ala Ala Tyr Gln Arg Phe Val Gln
    210                 215                 220

cgg gtc ttc gac acc ggc cag atg acg gtg ggc gac gcc gcg cgg aag       720
Arg Val Phe Asp Thr Gly Gln Met Thr Val Gly Asp Ala Ala Arg Lys
225                 230                 235                 240
```

```
gtg ctg cgc cgc gga cac gcc cag ttc gtg cgc ggg gcg ggc gtg agg       768
Val Leu Arg Arg Gly His Ala Gln Phe Val Arg Gly Ala Gly Val Arg
                245                 250                 255

ccg gcc gac cgg gtc aag gac ctc acg gtc ccg gag tgg acc gca ctc       816
Pro Ala Asp Arg Val Lys Asp Leu Thr Val Pro Glu Trp Thr Ala Leu
            260                 265                 270

ttc cgc gcc tac ggg cgg acg gcc gac cgc tga                           849
Phe Arg Ala Tyr Gly Arg Thr Ala Asp Arg
        275                 280


<210>  16
<211>  282
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  16

Val Thr Leu Lys Ser Pro Leu Pro Pro Gln Ser Val Ser Ala Pro Ala
1               5                   10                  15


Asp Ser Arg Ser Thr Ala Arg Arg Glu Trp Gly Gln Asn Phe Phe Arg
            20                  25                  30


Thr Ala Ala Ala Ala Cys Arg Phe Ser Ala Gln Leu Asp Gly Ser Asp
        35                  40                  45


Thr Ile Pro Pro Asp Ser Pro Asn Asp Leu Met Thr Val Glu Ile Gly
    50                  55                  60


Ala Gly Ser Gly Arg Val Thr Lys Val Leu Ala Ser Pro Gly Thr Pro
65                  70                  75                  80


Leu Leu Ala Val Glu Ile Asp Pro Arg Trp Ala Arg Arg Leu Ala Ala
                85                  90                  95


Glu Ser Leu Pro Asp Val Thr Val Val Asn Glu Asp Phe Leu Thr Leu
            100                 105                 110


Gln Leu Pro Gly Gln Pro Val Arg Leu Ile Gly Asn Leu Pro Phe Val
        115                 120                 125


Thr Gly Thr Arg Met Leu Arg Arg Cys Leu Asp Met Gly Pro Ala Arg
    130                 135                 140


Met Arg Gln Gly Val Phe Leu Leu Gln Arg Glu Tyr Val Gly Lys Arg
145                 150                 155                 160


Thr Gly Ala Trp Gly Gly Asn Leu Phe Asn Ala Gln Trp Glu Pro Trp
```

```
                165                 170                 175

Tyr Ser Phe Asp Arg Gly Leu Ala Phe Ser Arg Gln Asp Phe Thr Pro
            180                 185                 190

Val Pro Arg Ala Asp Thr Gln Thr Leu Met Val Ala Pro His Arg Arg
        195                 200                 205

Pro Ser Val Pro Trp Arg Glu Lys Ala Ala Tyr Gln Arg Phe Val Gln
    210                 215                 220

Arg Val Phe Asp Thr Gly Gln Met Thr Val Gly Asp Ala Ala Arg Lys
225                 230                 235                 240

Val Leu Arg Arg Gly His Ala Gln Phe Val Arg Gly Ala Gly Val Arg
                245                 250                 255

Pro Ala Asp Arg Val Lys Asp Leu Thr Val Pro Glu Trp Thr Ala Leu
            260                 265                 270

Phe Arg Ala Tyr Gly Arg Thr Ala Asp Arg
        275                 280


<210>  17
<211>  831
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(831)

<400>  17
gtg aag gag gtg gcg gtc gac acc ggt acc ccg gcc ggc ccc gtg tgg        48
Val Lys Glu Val Ala Val Asp Thr Gly Thr Pro Ala Gly Pro Val Trp
1               5                   10                  15

cgt ggt gcc ggc ctc ggc acc cag ctg tgg gta ctg acc gcg cgg cag        96
Arg Gly Ala Gly Leu Gly Thr Gln Leu Trp Val Leu Thr Ala Arg Gln
            20                  25                  30

atc cgt tcc atg tac ggc gac cgc cgc ctg gcg ctg ttc agc ctg atg       144
Ile Arg Ser Met Tyr Gly Asp Arg Arg Leu Ala Leu Phe Ser Leu Met
        35                  40                  45

caa ccg gtg atc atg ctg ttg ctg ctg agc gag atc ttc ggc agc atg       192
Gln Pro Val Ile Met Leu Leu Leu Leu Ser Glu Ile Phe Gly Ser Met
    50                  55                  60

gcc gac ccg gac gac ttc ccg cag ggc gtg cgc tac atc gac tac gtg       240
Ala Asp Pro Asp Asp Phe Pro Gln Gly Val Arg Tyr Ile Asp Tyr Val
65                  70                  75                  80
```

```
gtg ccc gcg ctg ctg gtc acc acc ggc atc ggc tcg gcc cag ggc gcg        288
Val Pro Ala Leu Leu Val Thr Thr Gly Ile Gly Ser Ala Gln Gly Ala
                85                  90                  95

ggg gtg ggc ctg gtc agg gac atg gac aac ggg atg gtg gcg cgc ttc        336
Gly Val Gly Leu Val Arg Asp Met Asp Asn Gly Met Val Ala Arg Phe
            100                 105                 110

cgc gtc ctg ccg gcc cgg ctg ttc ctg gtg ctg gtc gcc cgg tcg ctg        384
Arg Val Leu Pro Ala Arg Leu Phe Leu Val Leu Val Ala Arg Ser Leu
        115                 120                 125

gcc gat ctg gtc cgt gtg ttc acc gag ttg gtc gtc ctc gtg gcc gtc        432
Ala Asp Leu Val Arg Val Phe Thr Glu Leu Val Val Leu Val Ala Val
    130                 135                 140

ggt gtg atc ctg ctg ggc ttc cgt ccg gcc ggg ggt ttg tgg ggc acg        480
Gly Val Ile Leu Leu Gly Phe Arg Pro Ala Gly Gly Leu Trp Gly Thr
145                 150                 155                 160

tcc gcc gcc ctg ttg ctc acc ctg ttc gtc atc tgg tcg ctg atc tgg        528
Ser Ala Ala Leu Leu Leu Thr Leu Phe Val Ile Trp Ser Leu Ile Trp
                165                 170                 175

ggg ttc atc gcc ctc gcg gcg tgg ctg cgc agc gtg gag gtg atg tcc        576
Gly Phe Ile Ala Leu Ala Ala Trp Leu Arg Ser Val Glu Val Met Ser
            180                 185                 190

agc ctc gcg gtt ctg gtg atg ttc ccg ctc atg ttc gcc tcc agt gcg        624
Ser Leu Ala Val Leu Val Met Phe Pro Leu Met Phe Ala Ser Ser Ala
        195                 200                 205

ttc gtc ccg ctg gac gcc ctc ccg gag tgg ctg cgc tcg gtg gcg cac        672
Phe Val Pro Leu Asp Ala Leu Pro Glu Trp Leu Arg Ser Val Ala His
    210                 215                 220

ctc aac ccc gtg acg tac gcg gtc gac agc gcc cgc cgc ctg gcg ctg        720
Leu Asn Pro Val Thr Tyr Ala Val Asp Ser Ala Arg Arg Leu Ala Leu
225                 230                 235                 240

gac tgg gac ccg ggg tgg agc gtg ccc ggc gcg ctg ctg acc agc acc        768
Asp Trp Asp Pro Gly Trp Ser Val Pro Gly Ala Leu Leu Thr Ser Thr
                245                 250                 255

gcg ctc atg gcg gtg ggg atg tac gtc gcc ggg cgt tcc ttc aag agg        816
Ala Leu Met Ala Val Gly Met Tyr Val Ala Gly Arg Ser Phe Lys Arg
            260                 265                 270

ccc ccg aac gaa tga                                                    831
Pro Pro Asn Glu
        275


<210>  18
<211>  276
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  18
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Val Lys Glu Val Ala Val Asp Thr Gly Thr Pro Ala Gly Pro Val Trp
1               5                   10                  15

Arg Gly Ala Gly Leu Gly Thr Gln Leu Trp Val Leu Thr Ala Arg Gln
            20                  25                  30

Ile Arg Ser Met Tyr Gly Asp Arg Arg Leu Ala Leu Phe Ser Leu Met
        35                  40                  45

Gln Pro Val Ile Met Leu Leu Leu Leu Ser Glu Ile Phe Gly Ser Met
    50                  55                  60

Ala Asp Pro Asp Asp Phe Pro Gln Gly Val Arg Tyr Ile Asp Tyr Val
65                  70                  75                  80

Val Pro Ala Leu Leu Val Thr Thr Gly Ile Gly Ser Ala Gln Gly Ala
                85                  90                  95

Gly Val Gly Leu Val Arg Asp Met Asp Asn Gly Met Val Ala Arg Phe
            100                 105                 110

Arg Val Leu Pro Ala Arg Leu Phe Leu Val Leu Val Ala Arg Ser Leu
        115                 120                 125

Ala Asp Leu Val Arg Val Phe Thr Glu Leu Val Val Leu Val Ala Val
    130                 135                 140

Gly Val Ile Leu Leu Gly Phe Arg Pro Ala Gly Gly Leu Trp Gly Thr
145                 150                 155                 160

Ser Ala Ala Leu Leu Leu Thr Leu Phe Val Ile Trp Ser Leu Ile Trp
                165                 170                 175

Gly Phe Ile Ala Leu Ala Ala Trp Leu Arg Ser Val Glu Val Met Ser
            180                 185                 190

Ser Leu Ala Val Leu Val Met Phe Pro Leu Met Phe Ala Ser Ser Ala
        195                 200                 205

Phe Val Pro Leu Asp Ala Leu Pro Glu Trp Leu Arg Ser Val Ala His
    210                 215                 220

Leu Asn Pro Val Thr Tyr Ala Val Asp Ser Ala Arg Arg Leu Ala Leu
225                 230                 235                 240

Asp Trp Asp Pro Gly Trp Ser Val Pro Gly Ala Leu Leu Thr Ser Thr
```

245 250 255

Ala Leu Met Ala Val Gly Met Tyr Val Ala Gly Arg Ser Phe Lys Arg
260 265 270

Pro Pro Asn Glu
275

<210> 19
<211> 882
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(882)

<400> 19
gtg gac atc gag gtc gaa cgg ggc cgg gtg ctc ggg ctg ctg ggt cac 48
Val Asp Ile Glu Val Glu Arg Gly Arg Val Leu Gly Leu Leu Gly His
1 5 10 15

aac ggg gcc ggc aag acg acc ttg gtg aac atc ctt gcc acg gtc tcc 96
Asn Gly Ala Gly Lys Thr Thr Leu Val Asn Ile Leu Ala Thr Val Ser
20 25 30

ccg gcg tcc gcg ggc acg gtg acc gtc gcc ggt ttc gac gtc gcg acg 144
Pro Ala Ser Ala Gly Thr Val Thr Val Ala Gly Phe Asp Val Ala Thr
35 40 45

cag ggc gcc gag atc cgc gcg cgc atc ggg gtg acc ggc cag ttc gcg 192
Gln Gly Ala Glu Ile Arg Ala Arg Ile Gly Val Thr Gly Gln Phe Ala
50 55 60

tcg gtg gac gag tac ctg agc gga ttc cgc aac ctc gtc ctg atc ggc 240
Ser Val Asp Glu Tyr Leu Ser Gly Phe Arg Asn Leu Val Leu Ile Gly
65 70 75 80

cgc ctc ctc ggg gcg gga cgg cgt gag gcg gcg gcc cgg gcc acc gag 288
Arg Leu Leu Gly Ala Gly Arg Arg Glu Ala Ala Ala Arg Ala Thr Glu
85 90 95

ctc ctg gag ctg ttc gag ctg acc ggg gcg gcc cac cag ccc tcc cgc 336
Leu Leu Glu Leu Phe Glu Leu Thr Gly Ala Ala His Gln Pro Ser Arg
100 105 110

acc tac tcg ggc ggg atg cgc cga cgg ctc gac ctc gcc gcc agc ctg 384
Thr Tyr Ser Gly Gly Met Arg Arg Arg Leu Asp Leu Ala Ala Ser Leu
115 120 125

gtc ggc cgg ccg gac gtg ctg ttc ctc gac gag ccg acg acc ggg ctg 432
Val Gly Arg Pro Asp Val Leu Phe Leu Asp Glu Pro Thr Thr Gly Leu
130 135 140

gac ccg gcg acc cgg atc gcc ctg tgg gag acg gtg gag aag ctg gtg 480
Asp Pro Ala Thr Arg Ile Ala Leu Trp Glu Thr Val Glu Lys Leu Val
145 150 155 160

```
gcg ggc ggc acg acc gtc ctg ctg acc acc cag tac ctg gac gag gcg       528
Ala Gly Gly Thr Thr Val Leu Leu Thr Thr Gln Tyr Leu Asp Glu Ala
                165                 170                 175

gac cgg ctg gcc gac tgg atc acc gtc ctg tcg aag ggc cgg gtg gtg       576
Asp Arg Leu Ala Asp Trp Ile Thr Val Leu Ser Lys Gly Arg Val Val
            180                 185                 190

gcc tcg gac acc acc gac cgg ctc aag gcc gac ctg ggc cac cgg tcg       624
Ala Ser Asp Thr Thr Asp Arg Leu Lys Ala Asp Leu Gly His Arg Ser
        195                 200                 205

gtg cgg gtg gtc ctt ccg ccc gcc gcc gac ctg acg gcc gcc gcc gcc       672
Val Arg Val Val Leu Pro Pro Ala Ala Asp Leu Thr Ala Ala Ala Ala
    210                 215                 220

gcg ctc acc gcc ggc ggg ttc cgt ccg cgg tcc gac gcc ggg gag cac       720
Ala Leu Thr Ala Gly Gly Phe Arg Pro Arg Ser Asp Ala Gly Glu His
225                 230                 235                 240

gcg ctg acc acg ccc gtg gac acc tcg gcc ggt atc gcg ggc gtc atc       768
Ala Leu Thr Thr Pro Val Asp Thr Ser Ala Gly Ile Ala Gly Val Ile
                245                 250                 255

cgc gcg ctg gac acc gtc gga acg cag gcc gtc gag ctg acc gtc aag       816
Arg Ala Leu Asp Thr Val Gly Thr Gln Ala Val Glu Leu Thr Val Lys
            260                 265                 270

gag ccg tcc ctg gac gac gtc tac ctg gcg ctc acc cat ccc tca ccc       864
Glu Pro Ser Leu Asp Asp Val Tyr Leu Ala Leu Thr His Pro Ser Pro
        275                 280                 285

gcc gcc gac gcg gcc tga                                               882
Ala Ala Asp Ala Ala
    290


<210>  20
<211>  293
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  20

Val Asp Ile Glu Val Glu Arg Gly Arg Val Leu Gly Leu Leu Gly His
1               5                   10                  15


Asn Gly Ala Gly Lys Thr Thr Leu Val Asn Ile Leu Ala Thr Val Ser
            20                  25                  30


Pro Ala Ser Ala Gly Thr Val Thr Val Ala Gly Phe Asp Val Ala Thr
        35                  40                  45


Gln Gly Ala Glu Ile Arg Ala Arg Ile Gly Val Thr Gly Gln Phe Ala
    50                  55                  60
```

```
Ser Val Asp Glu Tyr Leu Ser Gly Phe Arg Asn Leu Val Leu Ile Gly
65                  70                  75                  80

Arg Leu Leu Gly Ala Gly Arg Arg Glu Ala Ala Arg Ala Thr Glu
                85                  90                  95

Leu Leu Glu Leu Phe Glu Leu Thr Gly Ala Ala His Gln Pro Ser Arg
            100                 105                 110

Thr Tyr Ser Gly Gly Met Arg Arg Arg Leu Asp Leu Ala Ala Ser Leu
        115                 120                 125

Val Gly Arg Pro Asp Val Leu Phe Leu Asp Glu Pro Thr Thr Gly Leu
    130                 135                 140

Asp Pro Ala Thr Arg Ile Ala Leu Trp Glu Thr Val Glu Lys Leu Val
145                 150                 155                 160

Ala Gly Gly Thr Thr Val Leu Leu Thr Thr Gln Tyr Leu Asp Glu Ala
                165                 170                 175

Asp Arg Leu Ala Asp Trp Ile Thr Val Leu Ser Lys Gly Arg Val Val
            180                 185                 190

Ala Ser Asp Thr Thr Asp Arg Leu Lys Ala Asp Leu Gly His Arg Ser
        195                 200                 205

Val Arg Val Val Leu Pro Pro Ala Ala Asp Leu Thr Ala Ala Ala Ala
    210                 215                 220

Ala Leu Thr Ala Gly Gly Phe Arg Pro Arg Ser Asp Ala Gly Glu His
225                 230                 235                 240

Ala Leu Thr Thr Pro Val Asp Thr Ser Ala Gly Ile Ala Gly Val Ile
                245                 250                 255

Arg Ala Leu Asp Thr Val Gly Thr Gln Ala Val Glu Leu Thr Val Lys
            260                 265                 270

Glu Pro Ser Leu Asp Asp Val Tyr Leu Ala Leu Thr His Pro Ser Pro
        275                 280                 285

Ala Ala Asp Ala Ala
    290

<210>  21
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<211>  228
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(228)

<400>  21
atg agc aac ccg ttc gag gac acg gaa gcc acc tac gtc gtg ctg gtc         48
Met Ser Asn Pro Phe Glu Asp Thr Glu Ala Thr Tyr Val Val Leu Val
1               5                   10                  15

aac gac gag ggg cag cac tcg ctg tgg ccg tcg ttc gcg gag gtc ccg         96
Asn Asp Glu Gly Gln His Ser Leu Trp Pro Ser Phe Ala Glu Val Pro
            20                  25                  30

gcg ggc tgg tcc gtc gtg gtg ccg gag acg gac cgg cag tcg tgc ctg        144
Ala Gly Trp Ser Val Val Val Pro Glu Thr Asp Arg Gln Ser Cys Leu
        35                  40                  45

gac tac atc aac gag aac tgg acc gac atg cgc ccc aag agc ctc gtc        192
Asp Tyr Ile Asn Glu Asn Trp Thr Asp Met Arg Pro Lys Ser Leu Val
    50                  55                  60

gag gcg atg gcg acg gcc ggg cag gac gcc cct tga                        228
Glu Ala Met Ala Thr Ala Gly Gln Asp Ala Pro
65                  70                  75


<210>  22
<211>  75
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  22

Met Ser Asn Pro Phe Glu Asp Thr Glu Ala Thr Tyr Val Val Leu Val
1               5                   10                  15


Asn Asp Glu Gly Gln His Ser Leu Trp Pro Ser Phe Ala Glu Val Pro
            20                  25                  30


Ala Gly Trp Ser Val Val Val Pro Glu Thr Asp Arg Gln Ser Cys Leu
        35                  40                  45


Asp Tyr Ile Asn Glu Asn Trp Thr Asp Met Arg Pro Lys Ser Leu Val
    50                  55                  60


Glu Ala Met Ala Thr Ala Gly Gln Asp Ala Pro
65                  70                  75


<210>  23
<211>  1212
<212>  DNA
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<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1212)

<400>  23
atg ggt gag gcc gtg acg gga ccg atg gag ctg agc aag gac gcg gac       48
Met Gly Glu Ala Val Thr Gly Pro Met Glu Leu Ser Lys Asp Ala Asp
1               5                   10                  15

gcc cgg ggg ctg ctt gag tgg ttc gcg tac aac agg acg cgt cat ccg       96
Ala Arg Gly Leu Leu Glu Trp Phe Ala Tyr Asn Arg Thr Arg His Pro
            20                  25                  30

gtg ttc tgg gac gag acc cga cag gcg tgg cag gtc ttc ggc tac gac      144
Val Phe Trp Asp Glu Thr Arg Gln Ala Trp Gln Val Phe Gly Tyr Asp
        35                  40                  45

gac tac gtg acg gtg tcg aac aac ccg cag ttc ttc tcc tcg gac ttc      192
Asp Tyr Val Thr Val Ser Asn Asn Pro Gln Phe Phe Ser Ser Asp Phe
    50                  55                  60

aac atg gtg atg ccg acg ccg ccc gaa ctg gag atg atc atc ggt ccg      240
Asn Met Val Met Pro Thr Pro Pro Glu Leu Glu Met Ile Ile Gly Pro
65                  70                  75                  80

ggc acg atc ggc gcg ctg gac ccg ccc gcg cac gga ccg atg cgc aag      288
Gly Thr Ile Gly Ala Leu Asp Pro Pro Ala His Gly Pro Met Arg Lys
                85                  90                  95

ctg gtg agc cag gcg ttc acc ccc cga cgg atc gcc cgg ctg gag ccc      336
Leu Val Ser Gln Ala Phe Thr Pro Arg Arg Ile Ala Arg Leu Glu Pro
            100                 105                 110

agg gtg cgc gcg atc acc gag gag ctc ctg gac aag gtg ggg cag cag      384
Arg Val Arg Ala Ile Thr Glu Glu Leu Leu Asp Lys Val Gly Gln Gln
        115                 120                 125

gac gtc gtc gac gcc gtg ggt gac ctg tcc tac gcg ctg ccg gtc atc      432
Asp Val Val Asp Ala Val Gly Asp Leu Ser Tyr Ala Leu Pro Val Ile
    130                 135                 140

gtg atc gcc gaa ctg ctg ggc ata ccc gcc ggc gac cgt gac ctg ttc      480
Val Ile Ala Glu Leu Leu Gly Ile Pro Ala Gly Asp Arg Asp Leu Phe
145                 150                 155                 160

cgg gag tgg gtc gac acc ctg ctg acg aac gag ggc ctg gag tac ccg      528
Arg Glu Trp Val Asp Thr Leu Leu Thr Asn Glu Gly Leu Glu Tyr Pro
                165                 170                 175

aac ctc ccg gac aac ttc acc gag acg atc gcg ccc gcg ctc aag gag      576
Asn Leu Pro Asp Asn Phe Thr Glu Thr Ile Ala Pro Ala Leu Lys Glu
            180                 185                 190

atg acc gac tac ctc ctg aag cag atc cac gcc aag cgg gac gcg ccc      624
Met Thr Asp Tyr Leu Leu Lys Gln Ile His Ala Lys Arg Asp Ala Pro
        195                 200                 205

gcc gac gac ctg gtc agc ggg ctg gtc cag gcg gag cag gac ggc cgc      672
```

```
Ala Asp Asp Leu Val Ser Gly Leu Val Gln Ala Glu Gln Asp Gly Arg
    210                 215                 220

cgg ctg acc gac gtc gag atc gtc aac atc gtc gcg ctg ctc ctg acg      720
Arg Leu Thr Asp Val Glu Ile Val Asn Ile Val Ala Leu Leu Leu Thr
225                 230                 235                 240

gcg ggg cac gtc tcc tcc agc acc ctg ctc agc aac ctg ttc ctg gtc      768
Ala Gly His Val Ser Ser Ser Thr Leu Leu Ser Asn Leu Phe Leu Val
                245                 250                 255

ctg gag gag aac ccg cag gcg ctg gag gac ctg cgg gcc gat cgc tcc      816
Leu Glu Glu Asn Pro Gln Ala Leu Glu Asp Leu Arg Ala Asp Arg Ser
            260                 265                 270

ctg gtg ccc ggc gcg atc gag gag acg ctg cgc tac cgc agc ccc ttc      864
Leu Val Pro Gly Ala Ile Glu Glu Thr Leu Arg Tyr Arg Ser Pro Phe
        275                 280                 285

aac aac atc ttc cgg ttc gtc aag gag gac acc acc gtc ctc ggt ccg      912
Asn Asn Ile Phe Arg Phe Val Lys Glu Asp Thr Thr Val Leu Gly Pro
    290                 295                 300

ctc atg gag aag ggc cag atg gtg atc gcc tgg agc cag tcc gcc aac      960
Leu Met Glu Lys Gly Gln Met Val Ile Ala Trp Ser Gln Ser Ala Asn
305                 310                 315                 320

cgg gac ccc cgg cac ttc ccg gac ccg gac acc ttc gac atc cgc cgc     1008
Arg Asp Pro Arg His Phe Pro Asp Pro Asp Thr Phe Asp Ile Arg Arg
                325                 330                 335

tcg gac ggc acc cgg cac atg gcc ttc ggg cac ggc atc cac cac tgc     1056
Ser Asp Gly Thr Arg His Met Ala Phe Gly His Gly Ile His His Cys
            340                 345                 350

ctg ggt gcc gcc ctc gcc cgc ctg gag ggc aag gtc atg ctc gaa ctc     1104
Leu Gly Ala Ala Leu Ala Arg Leu Glu Gly Lys Val Met Leu Glu Leu
        355                 360                 365

ctc ctg gac cgg gtc caa ggc ttc cgc atc gac cac gag cac acc gtg     1152
Leu Leu Asp Arg Val Gln Gly Phe Arg Ile Asp His Glu His Thr Val
    370                 375                 380

ttc tac gag gcc gac cag ctc act ccg aag tac ctg ccc gtc cgg gtc     1200
Phe Tyr Glu Ala Asp Gln Leu Thr Pro Lys Tyr Leu Pro Val Arg Val
385                 390                 395                 400

gac tgg aac tga                                                     1212
Asp Trp Asn


<210>  24
<211>  403
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  24

Met Gly Glu Ala Val Thr Gly Pro Met Glu Leu Ser Lys Asp Ala Asp
1               5                   10                  15
```

```
Ala Arg Gly Leu Leu Glu Trp Phe Ala Tyr Asn Arg Thr Arg His Pro
            20                  25                  30

Val Phe Trp Asp Glu Thr Arg Gln Ala Trp Gln Val Phe Gly Tyr Asp
        35                  40                  45

Asp Tyr Val Thr Val Ser Asn Asn Pro Gln Phe Phe Ser Ser Asp Phe
    50                  55                  60

Asn Met Val Met Pro Thr Pro Pro Glu Leu Glu Met Ile Ile Gly Pro
65                  70                  75                  80

Gly Thr Ile Gly Ala Leu Asp Pro Pro Ala His Gly Pro Met Arg Lys
                85                  90                  95

Leu Val Ser Gln Ala Phe Thr Pro Arg Arg Ile Ala Arg Leu Glu Pro
            100                 105                 110

Arg Val Arg Ala Ile Thr Glu Glu Leu Leu Asp Lys Val Gly Gln Gln
        115                 120                 125

Asp Val Val Asp Ala Val Gly Asp Leu Ser Tyr Ala Leu Pro Val Ile
    130                 135                 140

Val Ile Ala Glu Leu Leu Gly Ile Pro Ala Gly Asp Arg Asp Leu Phe
145                 150                 155                 160

Arg Glu Trp Val Asp Thr Leu Leu Thr Asn Glu Gly Leu Glu Tyr Pro
                165                 170                 175

Asn Leu Pro Asp Asn Phe Thr Glu Thr Ile Ala Pro Ala Leu Lys Glu
            180                 185                 190

Met Thr Asp Tyr Leu Leu Lys Gln Ile His Ala Lys Arg Asp Ala Pro
        195                 200                 205

Ala Asp Asp Leu Val Ser Gly Leu Val Gln Ala Glu Gln Asp Gly Arg
    210                 215                 220

Arg Leu Thr Asp Val Glu Ile Val Asn Ile Val Ala Leu Leu Leu Thr
225                 230                 235                 240

Ala Gly His Val Ser Ser Ser Thr Leu Leu Ser Asn Leu Phe Leu Val
                245                 250                 255
```

```
Leu Glu Glu Asn Pro Gln Ala Leu Glu Asp Leu Arg Ala Asp Arg Ser
            260                 265                 270

Leu Val Pro Gly Ala Ile Glu Glu Thr Leu Arg Tyr Arg Ser Pro Phe
        275                 280                 285

Asn Asn Ile Phe Arg Phe Val Lys Glu Asp Thr Thr Val Leu Gly Pro
    290                 295                 300

Leu Met Glu Lys Gly Gln Met Val Ile Ala Trp Ser Gln Ser Ala Asn
305                 310                 315                 320

Arg Asp Pro Arg His Phe Pro Asp Pro Asp Thr Phe Asp Ile Arg Arg
                325                 330                 335

Ser Asp Gly Thr Arg His Met Ala Phe Gly His Gly Ile His His Cys
            340                 345                 350

Leu Gly Ala Ala Leu Ala Arg Leu Glu Gly Lys Val Met Leu Glu Leu
        355                 360                 365

Leu Leu Asp Arg Val Gln Gly Phe Arg Ile Asp His Glu His Thr Val
    370                 375                 380

Phe Tyr Glu Ala Asp Gln Leu Thr Pro Lys Tyr Leu Pro Val Arg Val
385                 390                 395                 400

Asp Trp Asn


<210>  25
<211>  540
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(540)

<220>
<221>  CDS
<222>  (190)..(540)

<400>  25
ctg aac ccg agg gtc tcg tcc cgg agt cca ggg ccg tcc cga gcc ggc        48
Leu Asn Pro Arg Val Ser Ser Arg Ser Pro Gly Pro Ser Arg Ala Gly
1               5                   10                  15

cct gga cct cac gac cgc ccg ata agg agc gcc gcc atc gcc gag aac        96
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Pro Gly Pro His Asp Arg Pro Ile Arg Ser Ala Ala Ile Ala Glu Asn
20 25 30

aca gcc gag ctc cct gcc cgg cgg gtc ggc agg atc aag ccg tgc cgg 144
Thr Ala Glu Leu Pro Ala Arg Arg Val Gly Arg Ile Lys Pro Cys Arg
35 40 45

ctg atc agg ctc gag cag cac atc gac ccg cgc ggc agc ctc tcc gtg 192
Leu Ile Arg Leu Glu Gln His Ile Asp Pro Arg Gly Ser Leu Ser Val
50 55 60

atc gag tcc ggc gtg acc gtg gac ttc ccc gtc cga cgc gtc tac tac 240
Ile Glu Ser Gly Val Thr Val Asp Phe Pro Val Arg Arg Val Tyr Tyr
65 70 75 80

atg cat ggc cag acc cag tcc tct ccc ccg cgc ggc ctg cac gcg cac 288
Met His Gly Gln Thr Gln Ser Ser Pro Pro Arg Gly Leu His Ala His
85 90 95

cgc acc ctg gaa caa ctc gtc atc gcc gtc cac ggc gcc ttc tcc atc 336
Arg Thr Leu Glu Gln Leu Val Ile Ala Val His Gly Ala Phe Ser Ile
100 105 110

acc ctc gac gac ggc ttc cag cac gcc acc tac cgt ctg gac gaa ccc 384
Thr Leu Asp Asp Gly Phe Gln His Ala Thr Tyr Arg Leu Asp Glu Pro
115 120 125

gga gcc gga ctc tgc atc ggc ccc atg gtc tgg cgc gtc ctg aag gac 432
Gly Ala Gly Leu Cys Ile Gly Pro Met Val Trp Arg Val Leu Lys Asp
130 135 140

ttc gac ccc gac acc gtg gcc ctg gtc ctc gcc tcg cag cac tac gag 480
Phe Asp Pro Asp Thr Val Ala Leu Val Leu Ala Ser Gln His Tyr Glu
145 150 155 160

gag tcc gac tac tac cgc gac tac gac acc ttc ctg cat gac gca cgg 528
Glu Ser Asp Tyr Tyr Arg Asp Tyr Asp Thr Phe Leu His Asp Ala Arg
165 170 175

agc ctc aca tga 540
Ser Leu Thr

<210> 26
<211> 179
<212> PRT
<213> Streptomyces ambofaciens

<400> 26

Leu Asn Pro Arg Val Ser Ser Arg Ser Pro Gly Pro Ser Arg Ala Gly
1 5 10 15

Pro Gly Pro His Asp Arg Pro Ile Arg Ser Ala Ala Ile Ala Glu Asn
20 25 30

Thr Ala Glu Leu Pro Ala Arg Arg Val Gly Arg Ile Lys Pro Cys Arg
35 40 45

```
Leu Ile Arg Leu Glu Gln His Ile Asp Pro Arg Gly Ser Leu Ser Val
    50                  55                  60

Ile Glu Ser Gly Val Thr Val Asp Phe Pro Val Arg Arg Val Tyr Tyr
65                  70                  75                  80

Met His Gly Gln Thr Gln Ser Ser Pro Pro Arg Gly Leu His Ala His
                85                  90                  95

Arg Thr Leu Glu Gln Leu Val Ile Ala Val His Gly Ala Phe Ser Ile
            100                 105                 110

Thr Leu Asp Asp Gly Phe Gln His Ala Thr Tyr Arg Leu Asp Glu Pro
        115                 120                 125

Gly Ala Gly Leu Cys Ile Gly Pro Met Val Trp Arg Val Leu Lys Asp
    130                 135                 140

Phe Asp Pro Asp Thr Val Ala Leu Val Leu Ala Ser Gln His Tyr Glu
145                 150                 155                 160

Glu Ser Asp Tyr Tyr Arg Asp Tyr Asp Thr Phe Leu His Asp Ala Arg
                165                 170                 175

Ser Leu Thr


<210>  27
<211>  116
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  27

Val Ile Glu Ser Gly Val Thr Val Asp Phe Pro Val Arg Arg Val Tyr
1               5                   10                  15

Tyr Met His Gly Gln Thr Gln Ser Ser Pro Pro Arg Gly Leu His Ala
            20                  25                  30

His Arg Thr Leu Glu Gln Leu Val Ile Ala Val His Gly Ala Phe Ser
        35                  40                  45

Ile Thr Leu Asp Asp Gly Phe Gln His Ala Thr Tyr Arg Leu Asp Glu
    50                  55                  60
```

```
Pro Gly Ala Gly Leu Cys Ile Gly Pro Met Val Trp Arg Val Leu Lys
65                  70                  75                  80


Asp Phe Asp Pro Asp Thr Val Ala Leu Val Leu Ala Ser Gln His Tyr
                85                  90                  95


Glu Glu Ser Asp Tyr Tyr Arg Asp Tyr Asp Thr Phe Leu His Asp Ala
            100                 105                 110


Arg Ser Leu Thr
        115


<210>  28
<211>  1167
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1167)

<400>  28
atg acc atc ccc ttc ctc gac gcg ggc gcc ggc tac cgg gag ttg cga          48
Met Thr Ile Pro Phe Leu Asp Ala Gly Ala Gly Tyr Arg Glu Leu Arg
1               5                   10                  15

gcc gag atc gac gcg gcc ctg cag cgg gtg tcc gcc tcc ggc cgc tat          96
Ala Glu Ile Asp Ala Ala Leu Gln Arg Val Ser Ala Ser Gly Arg Tyr
            20                  25                  30

ctg ctc gac gcg gaa ctc gcg gcc ttc gag gag gag ttc gcc gcg tac         144
Leu Leu Asp Ala Glu Leu Ala Ala Phe Glu Glu Glu Phe Ala Ala Tyr
        35                  40                  45

tgc gac aac gac cac tgt gtg gcg gtg ggc agt ggc tgc gac gcg ctg         192
Cys Asp Asn Asp His Cys Val Ala Val Gly Ser Gly Cys Asp Ala Leu
    50                  55                  60

gag ctg tcc ctg cgg gcg ctg gac atc ggt ccc ggg gac gag gtg gtg         240
Glu Leu Ser Leu Arg Ala Leu Asp Ile Gly Pro Gly Asp Glu Val Val
65                  70                  75                  80

gtg ccc gcg cac acc ttc atc ggg acc tgg ctg gcc gtg tcc gct acc         288
Val Pro Ala His Thr Phe Ile Gly Thr Trp Leu Ala Val Ser Ala Thr
                85                  90                  95

ggg gca cgg ccg gtg gcc gtc gac ccg acg ccg gac ggg ctc tcc ctc         336
Gly Ala Arg Pro Val Ala Val Asp Pro Thr Pro Asp Gly Leu Ser Leu
            100                 105                 110

gac ccg gcg ctg gtg gag gcg gcg ctc acc cct cgg acc aga gcc ctg         384
Asp Pro Ala Leu Val Glu Ala Ala Leu Thr Pro Arg Thr Arg Ala Leu
        115                 120                 125

atg ccg gtg cac ctg cac ggg cac ccg gcc gac ctc gac ccg cta ctg         432
Met Pro Val His Leu His Gly His Pro Ala Asp Leu Asp Pro Leu Leu
```

```
    130                 135                 140

gcg atc gcc gga cgg cac ggc ctg gcc gtg gtc gag gac gcc gcg cag      480
Ala Ile Ala Gly Arg His Gly Leu Ala Val Val Glu Asp Ala Ala Gln
145                 150                 155                 160

gcc cac ggc gcc cgt tac cgg ggc cgc agg atc ggc tcg ggc cac gtg      528
Ala His Gly Ala Arg Tyr Arg Gly Arg Arg Ile Gly Ser Gly His Val
                165                 170                 175

gtc gcg ttc agc ttc tac ccc ggc aag aac ctc ggc gcc atg ggg gac      576
Val Ala Phe Ser Phe Tyr Pro Gly Lys Asn Leu Gly Ala Met Gly Asp
            180                 185                 190

ggc ggc gcg gtg gtc acg ggt gac tcc ggt gtg gcc gag cgg atc cgg      624
Gly Gly Ala Val Val Thr Gly Asp Ser Gly Val Ala Glu Arg Ile Arg
        195                 200                 205

ttg ctg cgc aac tgc ggc tcg cgg gag aag tac cgg cac gag gtg cgc      672
Leu Leu Arg Asn Cys Gly Ser Arg Glu Lys Tyr Arg His Glu Val Arg
    210                 215                 220

tcg acc cac tcc cgg ctc gac gag ttc cag gcg gcc gtg ctg cgg gcc      720
Ser Thr His Ser Arg Leu Asp Glu Phe Gln Ala Ala Val Leu Arg Ala
225                 230                 235                 240

aaa ctg ccg cgg ctc gac gcg tgg aac gcc cgc cgg gcc ggc acg gcc      768
Lys Leu Pro Arg Leu Asp Ala Trp Asn Ala Arg Arg Ala Gly Thr Ala
                245                 250                 255

gaa cgg tac ggg cgg gcc ctg ggt ccg gta ccg cag atc gcc gtc ccg      816
Glu Arg Tyr Gly Arg Ala Leu Gly Pro Val Pro Gln Ile Ala Val Pro
            260                 265                 270

gtc acc gct ccc tgg gcc gac ccg gtg tgg cac ctg tac gtg atc cgc      864
Val Thr Ala Pro Trp Ala Asp Pro Val Trp His Leu Tyr Val Ile Arg
        275                 280                 285

tgc gcg gag cgc gac gag ctg cgc cgc cgg ctg gaa cga gcc ggg gtc      912
Cys Ala Glu Arg Asp Glu Leu Arg Arg Arg Leu Glu Arg Ala Gly Val
    290                 295                 300

cag acc ctg atc cac tac ccc gtg ccc ccg cac cgg tcc ccg gcc tac      960
Gln Thr Leu Ile His Tyr Pro Val Pro Pro His Arg Ser Pro Ala Tyr
305                 310                 315                 320

gcc gac gac ccg gcc ggc gca ccg gcg ggg acc cac ccg ctc agt gag     1008
Ala Asp Asp Pro Ala Gly Ala Pro Ala Gly Thr His Pro Leu Ser Glu
                325                 330                 335

cgc ctg gcg gcg cag agc ctc agc ctt ccc ctg gga ccg cac ctc ggg     1056
Arg Leu Ala Ala Gln Ser Leu Ser Leu Pro Leu Gly Pro His Leu Gly
            340                 345                 350

gag gac gag gcc cgc gcc gtc gtg gcg gcg gtc cgg gcg gcg tcc gca     1104
Glu Asp Glu Ala Arg Ala Val Val Ala Ala Val Arg Ala Ala Ser Ala
        355                 360                 365

ggg ctg gcg gcg tac ccg acg ccg gac ggc cag cgt ttt cct cta gtg     1152
Gly Leu Ala Ala Tyr Pro Thr Pro Asp Gly Gln Arg Phe Pro Leu Val
    370                 375                 380
```

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acg gag aaa cga tga                                                 1167
Thr Glu Lys Arg
385


<210>  29
<211>  388
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  29

Met Thr Ile Pro Phe Leu Asp Ala Gly Ala Gly Tyr Arg Glu Leu Arg
1               5                   10                  15


Ala Glu Ile Asp Ala Ala Leu Gln Arg Val Ser Ala Ser Gly Arg Tyr
            20                  25                  30


Leu Leu Asp Ala Glu Leu Ala Ala Phe Glu Glu Glu Phe Ala Ala Tyr
        35                  40                  45


Cys Asp Asn Asp His Cys Val Ala Val Gly Ser Gly Cys Asp Ala Leu
    50                  55                  60


Glu Leu Ser Leu Arg Ala Leu Asp Ile Gly Pro Gly Asp Glu Val Val
65                  70                  75                  80


Val Pro Ala His Thr Phe Ile Gly Thr Trp Leu Ala Val Ser Ala Thr
                85                  90                  95


Gly Ala Arg Pro Val Ala Val Asp Pro Thr Pro Asp Gly Leu Ser Leu
            100                 105                 110


Asp Pro Ala Leu Val Glu Ala Ala Leu Thr Pro Arg Thr Arg Ala Leu
        115                 120                 125


Met Pro Val His Leu His Gly His Pro Ala Asp Leu Asp Pro Leu Leu
    130                 135                 140


Ala Ile Ala Gly Arg His Gly Leu Ala Val Val Glu Asp Ala Ala Gln
145                 150                 155                 160


Ala His Gly Ala Arg Tyr Arg Gly Arg Arg Ile Gly Ser Gly His Val
                165                 170                 175


Val Ala Phe Ser Phe Tyr Pro Gly Lys Asn Leu Gly Ala Met Gly Asp
            180                 185                 190
```

```
Gly Gly Ala Val Val Thr Gly Asp Ser Gly Val Ala Glu Arg Ile Arg
        195                 200                 205

Leu Leu Arg Asn Cys Gly Ser Arg Glu Lys Tyr Arg His Glu Val Arg
    210                 215                 220

Ser Thr His Ser Arg Leu Asp Glu Phe Gln Ala Ala Val Leu Arg Ala
225                 230                 235                 240

Lys Leu Pro Arg Leu Asp Ala Trp Asn Ala Arg Arg Ala Gly Thr Ala
                245                 250                 255

Glu Arg Tyr Gly Arg Ala Leu Gly Pro Val Pro Gln Ile Ala Val Pro
            260                 265                 270

Val Thr Ala Pro Trp Ala Asp Pro Val Trp His Leu Tyr Val Ile Arg
        275                 280                 285

Cys Ala Glu Arg Asp Glu Leu Arg Arg Arg Leu Glu Arg Ala Gly Val
    290                 295                 300

Gln Thr Leu Ile His Tyr Pro Val Pro Pro His Arg Ser Pro Ala Tyr
305                 310                 315                 320

Ala Asp Asp Pro Ala Gly Ala Pro Ala Gly Thr His Pro Leu Ser Glu
                325                 330                 335

Arg Leu Ala Ala Gln Ser Leu Ser Leu Pro Leu Gly Pro His Leu Gly
            340                 345                 350

Glu Asp Glu Ala Arg Ala Val Val Ala Ala Val Arg Ala Ala Ser Ala
        355                 360                 365

Gly Leu Ala Ala Tyr Pro Thr Pro Asp Gly Gln Arg Phe Pro Leu Val
    370                 375                 380

Thr Glu Lys Arg
385


<210>  30
<211>  909
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(909)
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<220>
<221>  CDS
<222>  (10)..(909)

<220>
<221>  CDS
<222>  (28)..(909)

<400>  30
atg acc gag gtc atg tca ggg cgt ccc gga atg aaa ggg atc atc ctc        48
Met Thr Glu Val Met Ser Gly Arg Pro Gly Met Lys Gly Ile Ile Leu
1               5                   10                  15

gca ggc ggc gga ggg acc cgc cta cgc ccc ttg acc ggc acg ctg tcc        96
Ala Gly Gly Gly Gly Thr Arg Leu Arg Pro Leu Thr Gly Thr Leu Ser
            20                  25                  30

aag caa ctg ctg ccc gtc tac gac aag ccg atg atc tac tac ccg ctg       144
Lys Gln Leu Leu Pro Val Tyr Asp Lys Pro Met Ile Tyr Tyr Pro Leu
        35                  40                  45

tcc gtc ctg atg ctg ggc ggc atc cgc gag atc ctc gtc gtc tcc tcc       192
Ser Val Leu Met Leu Gly Gly Ile Arg Glu Ile Leu Val Val Ser Ser
    50                  55                  60

acc cag cac atc gag ctg ttc cag cgg ctg ctg ggc gac ggc tcc cgc       240
Thr Gln His Ile Glu Leu Phe Gln Arg Leu Leu Gly Asp Gly Ser Arg
65                  70                  75                  80

ctc ggc ctc gac atc acc tac gcc gaa cag gcc gag ccc gag ggc ata       288
Leu Gly Leu Asp Ile Thr Tyr Ala Glu Gln Ala Glu Pro Glu Gly Ile
                85                  90                  95

gcg cag gcc atc acc atc ggc acc gac cac atc ggc gac tca ccg gtc       336
Ala Gln Ala Ile Thr Ile Gly Thr Asp His Ile Gly Asp Ser Pro Val
            100                 105                 110

gcg ctc atc ctg ggc gac aac atc ttc cac ggc ccc ggc ttc tcg gcc       384
Ala Leu Ile Leu Gly Asp Asn Ile Phe His Gly Pro Gly Phe Ser Ala
        115                 120                 125

gtg ctc cag ggc agc atc cgc cac ctc gac ggc tgt gtg ctg ttc ggc       432
Val Leu Gln Gly Ser Ile Arg His Leu Asp Gly Cys Val Leu Phe Gly
    130                 135                 140

tac ccg gtc agc gac ccg aag cgc tac ggc gtc ggc gag atc gac gac       480
Tyr Pro Val Ser Asp Pro Lys Arg Tyr Gly Val Gly Glu Ile Asp Asp
145                 150                 155                 160

cag ggc gta ctg ctg tcc ctg gag gag aaa ccg gcc cgg ccc cgc tcc       528
Gln Gly Val Leu Leu Ser Leu Glu Glu Lys Pro Ala Arg Pro Arg Ser
                165                 170                 175

aac ctc gcc gtc acc ggc ctc tac ctc tac gac aac gac gtg gtc gac       576
Asn Leu Ala Val Thr Gly Leu Tyr Leu Tyr Asp Asn Asp Val Val Asp
            180                 185                 190

atc gcc aag aac atc cgg ccc tcg gcg cgc ggc gaa ctc gag atc acg       624
Ile Ala Lys Asn Ile Arg Pro Ser Ala Arg Gly Glu Leu Glu Ile Thr
        195                 200                 205
```

```
gac gtc aac agg acc tac ctg gag cag aaa cgc gcc cgg ctc atc gaa         672
Asp Val Asn Arg Thr Tyr Leu Glu Gln Lys Arg Ala Arg Leu Ile Glu
    210                 215                 220

ctg ggc cac ggc ttc gcc tgg ctc gac atg ggc acc cac gac tcc ctc         720
Leu Gly His Gly Phe Ala Trp Leu Asp Met Gly Thr His Asp Ser Leu
225                 230                 235                 240

ctc cag ggc ggc cag tac gtc cag ctc atc gag cag cgc cag gga gtg         768
Leu Gln Gly Gly Gln Tyr Val Gln Leu Ile Glu Gln Arg Gln Gly Val
                245                 250                 255

cgg atc gcc tgc atc gag gag atc gcc ctg cgc atg ggc ttc atc gac         816
Arg Ile Ala Cys Ile Glu Glu Ile Ala Leu Arg Met Gly Phe Ile Asp
            260                 265                 270

gcc gac acc ctc cac cgg ctc ggc cgc gaa ctg ggc acc tcc gga tac         864
Ala Asp Thr Leu His Arg Leu Gly Arg Glu Leu Gly Thr Ser Gly Tyr
        275                 280                 285

ggc gcg tac ctg atg gag gtg gcc acc cgt gca ggc acc gaa tga             909
Gly Ala Tyr Leu Met Glu Val Ala Thr Arg Ala Gly Thr Glu
    290                 295                 300


<210>  31
<211>  302
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  31

Met Thr Glu Val Met Ser Gly Arg Pro Gly Met Lys Gly Ile Ile Leu
1               5                   10                  15


Ala Gly Gly Gly Gly Thr Arg Leu Arg Pro Leu Thr Gly Thr Leu Ser
            20                  25                  30


Lys Gln Leu Leu Pro Val Tyr Asp Lys Pro Met Ile Tyr Tyr Pro Leu
        35                  40                  45


Ser Val Leu Met Leu Gly Gly Ile Arg Glu Ile Leu Val Val Ser Ser
    50                  55                  60


Thr Gln His Ile Glu Leu Phe Gln Arg Leu Leu Gly Asp Gly Ser Arg
65                  70                  75                  80


Leu Gly Leu Asp Ile Thr Tyr Ala Glu Gln Ala Glu Pro Glu Gly Ile
                85                  90                  95


Ala Gln Ala Ile Thr Ile Gly Thr Asp His Ile Gly Asp Ser Pro Val
            100                 105                 110
```

```
Ala Leu Ile Leu Gly Asp Asn Ile Phe His Gly Pro Gly Phe Ser Ala
        115                 120                 125

Val Leu Gln Gly Ser Ile Arg His Leu Asp Gly Cys Val Leu Phe Gly
    130                 135                 140

Tyr Pro Val Ser Asp Pro Lys Arg Tyr Gly Val Gly Glu Ile Asp Asp
145                 150                 155                 160

Gln Gly Val Leu Leu Ser Leu Glu Glu Lys Pro Ala Arg Pro Arg Ser
                165                 170                 175

Asn Leu Ala Val Thr Gly Leu Tyr Leu Tyr Asp Asn Asp Val Val Asp
            180                 185                 190

Ile Ala Lys Asn Ile Arg Pro Ser Ala Arg Gly Glu Leu Glu Ile Thr
        195                 200                 205

Asp Val Asn Arg Thr Tyr Leu Glu Gln Lys Arg Ala Arg Leu Ile Glu
    210                 215                 220

Leu Gly His Gly Phe Ala Trp Leu Asp Met Gly Thr His Asp Ser Leu
225                 230                 235                 240

Leu Gln Gly Gly Gln Tyr Val Gln Leu Ile Glu Gln Arg Gln Gly Val
                245                 250                 255

Arg Ile Ala Cys Ile Glu Glu Ile Ala Leu Arg Met Gly Phe Ile Asp
            260                 265                 270

Ala Asp Thr Leu His Arg Leu Gly Arg Glu Leu Gly Thr Ser Gly Tyr
        275                 280                 285

Gly Ala Tyr Leu Met Glu Val Ala Thr Arg Ala Gly Thr Glu
    290                 295                 300


<210>  32
<211>  299
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  32

Val Met Ser Gly Arg Pro Gly Met Lys Gly Ile Ile Leu Ala Gly Gly
1               5                   10                  15

Gly Gly Thr Arg Leu Arg Pro Leu Thr Gly Thr Leu Ser Lys Gln Leu
            20                  25                  30
```

```
Leu Pro Val Tyr Asp Lys Pro Met Ile Tyr Tyr Pro Leu Ser Val Leu
        35                  40                  45

Met Leu Gly Gly Ile Arg Glu Ile Leu Val Val Ser Ser Thr Gln His
    50                  55                  60

Ile Glu Leu Phe Gln Arg Leu Leu Gly Asp Gly Ser Arg Leu Gly Leu
65                  70                  75                  80

Asp Ile Thr Tyr Ala Glu Gln Ala Glu Pro Glu Gly Ile Ala Gln Ala
                85                  90                  95

Ile Thr Ile Gly Thr Asp His Ile Gly Asp Ser Pro Val Ala Leu Ile
            100                 105                 110

Leu Gly Asp Asn Ile Phe His Gly Pro Gly Phe Ser Ala Val Leu Gln
        115                 120                 125

Gly Ser Ile Arg His Leu Asp Gly Cys Val Leu Phe Gly Tyr Pro Val
    130                 135                 140

Ser Asp Pro Lys Arg Tyr Gly Val Gly Glu Ile Asp Asp Gln Gly Val
145                 150                 155                 160

Leu Leu Ser Leu Glu Glu Lys Pro Ala Arg Pro Arg Ser Asn Leu Ala
                165                 170                 175

Val Thr Gly Leu Tyr Leu Tyr Asp Asn Asp Val Val Asp Ile Ala Lys
            180                 185                 190

Asn Ile Arg Pro Ser Ala Arg Gly Glu Leu Glu Ile Thr Asp Val Asn
        195                 200                 205

Arg Thr Tyr Leu Glu Gln Lys Arg Ala Arg Leu Ile Glu Leu Gly His
    210                 215                 220

Gly Phe Ala Trp Leu Asp Met Gly Thr His Asp Ser Leu Leu Gln Gly
225                 230                 235                 240

Gly Gln Tyr Val Gln Leu Ile Glu Gln Arg Gln Gly Val Arg Ile Ala
                245                 250                 255

Cys Ile Glu Glu Ile Ala Leu Arg Met Gly Phe Ile Asp Ala Asp Thr
            260                 265                 270
```

Leu His Arg Leu Gly Arg Glu Leu Gly Thr Ser Gly Tyr Gly Ala Tyr
275 280 285

Leu Met Glu Val Ala Thr Arg Ala Gly Thr Glu
290 295

<210> 33
<211> 293
<212> PRT
<213> Streptomyces ambofaciens

<400> 33

Gly Met Lys Gly Ile Ile Leu Ala Gly Gly Gly Gly Thr Arg Leu Arg
1 5 10 15

Pro Leu Thr Gly Thr Leu Ser Lys Gln Leu Leu Pro Val Tyr Asp Lys
20 25 30

Pro Met Ile Tyr Tyr Pro Leu Ser Val Leu Met Leu Gly Gly Ile Arg
35 40 45

Glu Ile Leu Val Val Ser Ser Thr Gln His Ile Glu Leu Phe Gln Arg
50 55 60

Leu Leu Gly Asp Gly Ser Arg Leu Gly Leu Asp Ile Thr Tyr Ala Glu
65 70 75 80

Gln Ala Glu Pro Glu Gly Ile Ala Gln Ala Ile Thr Ile Gly Thr Asp
85 90 95

His Ile Gly Asp Ser Pro Val Ala Leu Ile Leu Gly Asp Asn Ile Phe
100 105 110

His Gly Pro Gly Phe Ser Ala Val Leu Gln Gly Ser Ile Arg His Leu
115 120 125

Asp Gly Cys Val Leu Phe Gly Tyr Pro Val Ser Asp Pro Lys Arg Tyr
130 135 140

Gly Val Gly Glu Ile Asp Asp Gln Gly Val Leu Leu Ser Leu Glu Glu
145 150 155 160

Lys Pro Ala Arg Pro Arg Ser Asn Leu Ala Val Thr Gly Leu Tyr Leu
165 170 175

Tyr Asp Asn Asp Val Val Asp Ile Ala Lys Asn Ile Arg Pro Ser Ala

```
            180                 185                 190

Arg Gly Glu Leu Glu Ile Thr Asp Val Asn Arg Thr Tyr Leu Glu Gln
        195                 200                 205

Lys Arg Ala Arg Leu Ile Glu Leu Gly His Gly Phe Ala Trp Leu Asp
    210                 215                 220

Met Gly Thr His Asp Ser Leu Leu Gln Gly Gly Gln Tyr Val Gln Leu
225                 230                 235                 240

Ile Glu Gln Arg Gln Gly Val Arg Ile Ala Cys Ile Glu Glu Ile Ala
                245                 250                 255

Leu Arg Met Gly Phe Ile Asp Ala Asp Thr Leu His Arg Leu Gly Arg
            260                 265                 270

Glu Leu Gly Thr Ser Gly Tyr Gly Ala Tyr Leu Met Glu Val Ala Thr
        275                 280                 285

Arg Ala Gly Thr Glu
    290
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<210> 34
<211> 1038
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(1038)

<400> 34

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gtg cag gca ccg aat gag acg ccg cgc cgg ccc gcc cgc tcc gcc ggc        48
Val Gln Ala Pro Asn Glu Thr Pro Arg Arg Pro Ala Arg Ser Ala Gly
1               5                   10                  15

cga cgg ccg ccg gcc cgg atc ctc gtc acc ggg ggc gcc ggc ttc atc        96
Arg Arg Pro Pro Ala Arg Ile Leu Val Thr Gly Gly Ala Gly Phe Ile
            20                  25                  30

ggc tcg cgc ttc gtg aac gcg ctg ctg gac ggc tcc ctg ccg gag ttc       144
Gly Ser Arg Phe Val Asn Ala Leu Leu Asp Gly Ser Leu Pro Glu Phe
        35                  40                  45

ggc aaa ccc gag gtg agg gtg ctc gac gcg ctc acc tac gcg ggc aac       192
Gly Lys Pro Glu Val Arg Val Leu Asp Ala Leu Thr Tyr Ala Gly Asn
    50                  55                  60

ctg gcc aat ctg gcc ccg gtg ggc gac tgt ccc cgg ctg cgg atc ttc       240
Leu Ala Asn Leu Ala Pro Val Gly Asp Cys Pro Arg Leu Arg Ile Phe
65                  70                  75                  80
```

ccg ggg gac atc cgc gac cgc ggc gcg gtc acc cag gcg atg gcg ggg 288
Pro Gly Asp Ile Arg Asp Arg Gly Ala Val Thr Gln Ala Met Ala Gly
85 90 95

gtc gac ctg gtg gtg cac ttc gcg gcc gag tcg cac gtg gac cgc tcg 336
Val Asp Leu Val Val His Phe Ala Ala Glu Ser His Val Asp Arg Ser
100 105 110

atc gac gac gcc gac gcc ttc gtg cgc acc aac gtg ctg ggc acc cag 384
Ile Asp Asp Ala Asp Ala Phe Val Arg Thr Asn Val Leu Gly Thr Gln
115 120 125

gtc ctc ctc cag gag gca ctg gcc gta cgc ccc ggg ctg ttc gtg cac 432
Val Leu Leu Gln Glu Ala Leu Ala Val Arg Pro Gly Leu Phe Val His
130 135 140

gtc tcg acg gac gag gtg tac ggc tcc atc gag gag ggg tcc tgg ccc 480
Val Ser Thr Asp Glu Val Tyr Gly Ser Ile Glu Glu Gly Ser Trp Pro
145 150 155 160

gag gag cac ccg ctg aac ccc aac tcg ccc tac gcc gcc tcg aag gcg 528
Glu Glu His Pro Leu Asn Pro Asn Ser Pro Tyr Ala Ala Ser Lys Ala
165 170 175

tcc tcc gac ctg ctg gcg ctg gcc cac cac cgc acg cac gga ctg ccg 576
Ser Ser Asp Leu Leu Ala Leu Ala His His Arg Thr His Gly Leu Pro
180 185 190

gtg tgc gtc acc cgc tgc tcc aac aac tac ggg ccc tac cag tac ccg 624
Val Cys Val Thr Arg Cys Ser Asn Asn Tyr Gly Pro Tyr Gln Tyr Pro
195 200 205

gag aag atc atc ccg ctg ttc acc agc agc ctc ctc gac ggc ggg acc 672
Glu Lys Ile Ile Pro Leu Phe Thr Ser Ser Leu Leu Asp Gly Gly Thr
210 215 220

gtc ccg ctc tac ggg gac ggc ggc aac cgg cgc gac tgg ctg cac gtg 720
Val Pro Leu Tyr Gly Asp Gly Gly Asn Arg Arg Asp Trp Leu His Val
225 230 235 240

gac gac cac tgc cgg ggc atc gcc ctg gtg gcc cgg ggc ggc cgg ccc 768
Asp Asp His Cys Arg Gly Ile Ala Leu Val Ala Arg Gly Gly Arg Pro
245 250 255

ggc gag gtc tac aac atc ggc ggc ggc acc gag ctg agc aac gtc gag 816
Gly Glu Val Tyr Asn Ile Gly Gly Gly Thr Glu Leu Ser Asn Val Glu
260 265 270

ctc acg gag cgt ctg ctg aaa ctg tgc gga gcc gac tgg tcg gcg gtg 864
Leu Thr Glu Arg Leu Leu Lys Leu Cys Gly Ala Asp Trp Ser Ala Val
275 280 285

cgg cgg gtg ccc gac cgc aag ggc cac gac cgg cgc tac tcc gtc gac 912
Arg Arg Val Pro Asp Arg Lys Gly His Asp Arg Arg Tyr Ser Val Asp
290 295 300

tac acc aag atc gcg gac gag ctg ggt tac gcg ccg cgg atc acc atc 960
Tyr Thr Lys Ile Ala Asp Glu Leu Gly Tyr Ala Pro Arg Ile Thr Ile
305 310 315 320

```
gac gaa ggg ctg gag cgg acc gtg cac tgg tac cgg gag aac cgc gcg      1008
Asp Glu Gly Leu Glu Arg Thr Val His Trp Tyr Arg Glu Asn Arg Ala
                325                 330                 335

tgg tgg gcg ccc gcg aag agg ggg cga tga                              1038
Trp Trp Ala Pro Ala Lys Arg Gly Arg
            340                 345


<210>  35
<211>  345
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  35

Val Gln Ala Pro Asn Glu Thr Pro Arg Arg Pro Ala Arg Ser Ala Gly
1               5                   10                  15


Arg Arg Pro Pro Ala Arg Ile Leu Val Thr Gly Gly Ala Gly Phe Ile
            20                  25                  30


Gly Ser Arg Phe Val Asn Ala Leu Leu Asp Gly Ser Leu Pro Glu Phe
        35                  40                  45


Gly Lys Pro Glu Val Arg Val Leu Asp Ala Leu Thr Tyr Ala Gly Asn
    50                  55                  60


Leu Ala Asn Leu Ala Pro Val Gly Asp Cys Pro Arg Leu Arg Ile Phe
65                  70                  75                  80


Pro Gly Asp Ile Arg Asp Arg Gly Ala Val Thr Gln Ala Met Ala Gly
                85                  90                  95


Val Asp Leu Val Val His Phe Ala Ala Glu Ser His Val Asp Arg Ser
            100                 105                 110


Ile Asp Asp Ala Asp Ala Phe Val Arg Thr Asn Val Leu Gly Thr Gln
        115                 120                 125


Val Leu Leu Gln Glu Ala Leu Ala Val Arg Pro Gly Leu Phe Val His
    130                 135                 140


Val Ser Thr Asp Glu Val Tyr Gly Ser Ile Glu Glu Gly Ser Trp Pro
145                 150                 155                 160


Glu Glu His Pro Leu Asn Pro Asn Ser Pro Tyr Ala Ala Ser Lys Ala
                165                 170                 175


Ser Ser Asp Leu Leu Ala Leu Ala His His Arg Thr His Gly Leu Pro
```

```
            180                 185                 190

Val Cys Val Thr Arg Cys Ser Asn Asn Tyr Gly Pro Tyr Gln Tyr Pro
        195                 200                 205

Glu Lys Ile Ile Pro Leu Phe Thr Ser Ser Leu Leu Asp Gly Gly Thr
    210                 215                 220

Val Pro Leu Tyr Gly Asp Gly Gly Asn Arg Arg Asp Trp Leu His Val
225                 230                 235                 240

Asp Asp His Cys Arg Gly Ile Ala Leu Val Ala Arg Gly Gly Arg Pro
                245                 250                 255

Gly Glu Val Tyr Asn Ile Gly Gly Gly Thr Glu Leu Ser Asn Val Glu
            260                 265                 270

Leu Thr Glu Arg Leu Leu Lys Leu Cys Gly Ala Asp Trp Ser Ala Val
        275                 280                 285

Arg Arg Val Pro Asp Arg Lys Gly His Asp Arg Arg Tyr Ser Val Asp
    290                 295                 300

Tyr Thr Lys Ile Ala Asp Glu Leu Gly Tyr Ala Pro Arg Ile Thr Ile
305                 310                 315                 320

Asp Glu Gly Leu Glu Arg Thr Val His Trp Tyr Arg Glu Asn Arg Ala
                325                 330                 335

Trp Trp Ala Pro Ala Lys Arg Gly Arg
            340                 345
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<210> 36
<211> 804
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(804)

<220>
<221> CDS
<222> (7)..(804)

<220>
<221> CDS
<222> (22)..(804)

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<400>  36
atg acg gtg acg acc gca tcc gtg gac ccg ctc gac ctg tgg ctc cgc      48
Met Thr Val Thr Thr Ala Ser Val Asp Pro Leu Asp Leu Trp Leu Arg
1               5                   10                  15

cgg tac cag ccg tcc gcg tca ccc gcc gtc cgg ctg gtg tgc ttc ccg      96
Arg Tyr Gln Pro Ser Ala Ser Pro Ala Val Arg Leu Val Cys Phe Pro
            20                  25                  30

cac gcg ggc ggc tcg gcg agt tcg ttc ctg ccg ttc acc cgg cag ctg     144
His Ala Gly Gly Ser Ala Ser Ser Phe Leu Pro Phe Thr Arg Gln Leu
        35                  40                  45

ccg gac cgg atc gag gtc gtg gcc gtc cag tac ccc ggg cgc cag gac     192
Pro Asp Arg Ile Glu Val Val Ala Val Gln Tyr Pro Gly Arg Gln Asp
    50                  55                  60

cgc agg agc gaa ccg ctg gtc gac acc atc gag gga ctg gcc gag ccc     240
Arg Arg Ser Glu Pro Leu Val Asp Thr Ile Glu Gly Leu Ala Glu Pro
65                  70                  75                  80

ctg gcc ggc ctg ctg gag gcg cag gcc ggc ccc ccg gtg gtg ctg ttc     288
Leu Ala Gly Leu Leu Glu Ala Gln Ala Gly Pro Pro Val Val Leu Phe
                85                  90                  95

ggg cac agc atg ggc gcg ctg gtg gcc tac gag gtc gcc cgc gcg ctc     336
Gly His Ser Met Gly Ala Leu Val Ala Tyr Glu Val Ala Arg Ala Leu
            100                 105                 110

cag cgg cgg gga gcg gct ccg gtg cgc ctg gtg gtc tcc ggg cgc cgg     384
Gln Arg Arg Gly Ala Ala Pro Val Arg Leu Val Val Ser Gly Arg Arg
        115                 120                 125

gcc ccc gcc gtc gac cgg ccg atg acc gtg cac ctc tac gac gac gac     432
Ala Pro Ala Val Asp Arg Pro Met Thr Val His Leu Tyr Asp Asp Asp
    130                 135                 140

cgg ctg gtc gag gaa ctc cgc aag ctc gac ggc acc gac agc cag gtg     480
Arg Leu Val Glu Glu Leu Arg Lys Leu Asp Gly Thr Asp Ser Gln Val
145                 150                 155                 160

ttc gcc gat ccg gag ctg ctc cgg ctg gtg ctg ccc gtg atc cgc aac     528
Phe Ala Asp Pro Glu Leu Leu Arg Leu Val Leu Pro Val Ile Arg Asn
                165                 170                 175

gac tac cgg gcc gtg gcg gcc tac gcc cac cgc ccg ggg gcg ccg ctg     576
Asp Tyr Arg Ala Val Ala Ala Tyr Ala His Arg Pro Gly Ala Pro Leu
            180                 185                 190

gac tgc ccc ctc acc gtg ttc acc ggc gcc gac gac ccc acc gtg acc     624
Asp Cys Pro Leu Thr Val Phe Thr Gly Ala Asp Asp Pro Thr Val Thr
        195                 200                 205

gcg gcc gag gcg gcg gcc tgg cac gag gcg gcg gcg tcc gac gtc gag     672
Ala Ala Glu Ala Ala Ala Trp His Glu Ala Ala Ala Ser Asp Val Glu
    210                 215                 220

acg cgc acc ttc ccc ggt ggc cac ttc ttc ccg tac cag cgg acc gcg     720
Thr Arg Thr Phe Pro Gly Gly His Phe Phe Pro Tyr Gln Arg Thr Ala
225                 230                 235                 240
```

```
gag gtg tgc ggg gcc ctg gtc gac acg ctc gag ccg ctg ctg tcg gcc       768
Glu Val Cys Gly Ala Leu Val Asp Thr Leu Glu Pro Leu Leu Ser Ala
                245                 250                 255

ggg acg cgc ggt gtc cgg cgg gtc cgc ccg ggg tga                       804
Gly Thr Arg Gly Val Arg Arg Val Arg Pro Gly
            260                 265


<210>  37
<211>  267
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  37

Met Thr Val Thr Thr Ala Ser Val Asp Pro Leu Asp Leu Trp Leu Arg
1               5                   10                  15


Arg Tyr Gln Pro Ser Ala Ser Pro Ala Val Arg Leu Val Cys Phe Pro
            20                  25                  30


His Ala Gly Gly Ser Ala Ser Ser Phe Leu Pro Phe Thr Arg Gln Leu
        35                  40                  45


Pro Asp Arg Ile Glu Val Val Ala Val Gln Tyr Pro Gly Arg Gln Asp
    50                  55                  60


Arg Arg Ser Glu Pro Leu Val Asp Thr Ile Glu Gly Leu Ala Glu Pro
65                  70                  75                  80


Leu Ala Gly Leu Leu Glu Ala Gln Ala Gly Pro Pro Val Val Leu Phe
                85                  90                  95


Gly His Ser Met Gly Ala Leu Val Ala Tyr Glu Val Ala Arg Ala Leu
            100                 105                 110


Gln Arg Arg Gly Ala Ala Pro Val Arg Leu Val Val Ser Gly Arg Arg
        115                 120                 125


Ala Pro Ala Val Asp Arg Pro Met Thr Val His Leu Tyr Asp Asp Asp
    130                 135                 140


Arg Leu Val Glu Glu Leu Arg Lys Leu Asp Gly Thr Asp Ser Gln Val
145                 150                 155                 160


Phe Ala Asp Pro Glu Leu Leu Arg Leu Val Leu Pro Val Ile Arg Asn
                165                 170                 175


Asp Tyr Arg Ala Val Ala Ala Tyr Ala His Arg Pro Gly Ala Pro Leu
```

```
            180                 185                 190

Asp Cys Pro Leu Thr Val Phe Thr Gly Ala Asp Asp Pro Thr Val Thr
        195                 200                 205

Ala Ala Glu Ala Ala Ala Trp His Glu Ala Ala Ala Ser Asp Val Glu
    210                 215                 220

Thr Arg Thr Phe Pro Gly Gly His Phe Phe Pro Tyr Gln Arg Thr Ala
225                 230                 235                 240

Glu Val Cys Gly Ala Leu Val Asp Thr Leu Glu Pro Leu Leu Ser Ala
                245                 250                 255

Gly Thr Arg Gly Val Arg Arg Val Arg Pro Gly
            260                 265


<210>  38
<211>  265
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  38

Val Thr Thr Ala Ser Val Asp Pro Leu Asp Leu Trp Leu Arg Arg Tyr
1               5                   10                  15

Gln Pro Ser Ala Ser Pro Ala Val Arg Leu Val Cys Phe Pro His Ala
            20                  25                  30

Gly Gly Ser Ala Ser Ser Phe Leu Pro Phe Thr Arg Gln Leu Pro Asp
    35                  40                  45

Arg Ile Glu Val Val Ala Val Gln Tyr Pro Gly Arg Gln Asp Arg Arg
    50                  55                  60

Ser Glu Pro Leu Val Asp Thr Ile Glu Gly Leu Ala Glu Pro Leu Ala
65                  70                  75                  80

Gly Leu Leu Glu Ala Gln Ala Gly Pro Pro Val Val Leu Phe Gly His
                85                  90                  95

Ser Met Gly Ala Leu Val Ala Tyr Glu Val Ala Arg Ala Leu Gln Arg
            100                 105                 110

Arg Gly Ala Ala Pro Val Arg Leu Val Val Ser Gly Arg Arg Ala Pro
        115                 120                 125
```

```
Ala Val Asp Arg Pro Met Thr Val His Leu Tyr Asp Asp Asp Arg Leu
    130                 135                 140


Val Glu Glu Leu Arg Lys Leu Asp Gly Thr Asp Ser Gln Val Phe Ala
145                 150                 155                 160


Asp Pro Glu Leu Leu Arg Leu Val Leu Pro Val Ile Arg Asn Asp Tyr
                165                 170                 175


Arg Ala Val Ala Ala Tyr Ala His Arg Pro Gly Ala Pro Leu Asp Cys
            180                 185                 190


Pro Leu Thr Val Phe Thr Gly Ala Asp Asp Pro Thr Val Thr Ala Ala
        195                 200                 205


Glu Ala Ala Ala Trp His Glu Ala Ala Ala Ser Asp Val Glu Thr Arg
    210                 215                 220


Thr Phe Pro Gly Gly His Phe Phe Pro Tyr Gln Arg Thr Ala Glu Val
225                 230                 235                 240


Cys Gly Ala Leu Val Asp Thr Leu Glu Pro Leu Leu Ser Ala Gly Thr
                245                 250                 255


Arg Gly Val Arg Arg Val Arg Pro Gly
            260                 265


<210>  39
<211>  260
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  39

Val Asp Pro Leu Asp Leu Trp Leu Arg Arg Tyr Gln Pro Ser Ala Ser
1               5                   10                  15


Pro Ala Val Arg Leu Val Cys Phe Pro His Ala Gly Gly Ser Ala Ser
            20                  25                  30


Ser Phe Leu Pro Phe Thr Arg Gln Leu Pro Asp Arg Ile Glu Val Val
        35                  40                  45


Ala Val Gln Tyr Pro Gly Arg Gln Asp Arg Arg Ser Glu Pro Leu Val
    50                  55                  60


Asp Thr Ile Glu Gly Leu Ala Glu Pro Leu Ala Gly Leu Leu Glu Ala
```

65 70 75 80

Gln Ala Gly Pro Pro Val Val Leu Phe Gly His Ser Met Gly Ala Leu
85 90 95

Val Ala Tyr Glu Val Ala Arg Ala Leu Gln Arg Arg Gly Ala Ala Pro
100 105 110

Val Arg Leu Val Val Ser Gly Arg Arg Ala Pro Ala Val Asp Arg Pro
115 120 125

Met Thr Val His Leu Tyr Asp Asp Asp Arg Leu Val Glu Glu Leu Arg
130 135 140

Lys Leu Asp Gly Thr Asp Ser Gln Val Phe Ala Asp Pro Glu Leu Leu
145 150 155 160

Arg Leu Val Leu Pro Val Ile Arg Asn Asp Tyr Arg Ala Val Ala Ala
165 170 175

Tyr Ala His Arg Pro Gly Ala Pro Leu Asp Cys Pro Leu Thr Val Phe
180 185 190

Thr Gly Ala Asp Asp Pro Thr Val Thr Ala Ala Glu Ala Ala Ala Trp
195 200 205

His Glu Ala Ala Ala Ser Asp Val Glu Thr Arg Thr Phe Pro Gly Gly
210 215 220

His Phe Phe Pro Tyr Gln Arg Thr Ala Glu Val Cys Gly Ala Leu Val
225 230 235 240

Asp Thr Leu Glu Pro Leu Leu Ser Ala Gly Thr Arg Gly Val Arg Arg
245 250 255

Val Arg Pro Gly
260

<210> 40
<211> 1410
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(1410)

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<220>
<221>  CDS
<222>  (46)..(1410)

<400>  40
gtg ggc acg gtc gag tac gcc gtc cac cgg cgt acc gcg gaa cgg gtg      48
Val Gly Thr Val Glu Tyr Ala Val His Arg Arg Thr Ala Glu Arg Val
1               5                   10                  15

agg gtc tcc gcc gac acc ctg gac agc ccg gtc acc gcg ctg gcg gag      96
Arg Val Ser Ala Asp Thr Leu Asp Ser Pro Val Thr Ala Leu Ala Glu
            20                  25                  30

gtg ccc cgc tgg ctg gag gaa tac cac cgg gcg cac cgc ttc cac gtc     144
Val Pro Arg Trp Leu Glu Glu Tyr His Arg Ala His Arg Phe His Val
        35                  40                  45

gag ccg atc ccc ttc gac cgg ctc cgg cgg tgg tcc ttc gag ccg ggc     192
Glu Pro Ile Pro Phe Asp Arg Leu Arg Arg Trp Ser Phe Glu Pro Gly
    50                  55                  60

acc ggc gac ctg cgg cac gag acg ggc cgc ttc ttc tcc gtg gag ggg     240
Thr Gly Asp Leu Arg His Glu Thr Gly Arg Phe Phe Ser Val Glu Gly
65                  70                  75                  80

ctg cgc acc agc tcg gac gcc gat ccg gtc gcc cgt gtc cag ccg atc     288
Leu Arg Thr Ser Ser Asp Ala Asp Pro Val Ala Arg Val Gln Pro Ile
                85                  90                  95

atc gtg cag ccc gag gtg ggg ctg ctc ggc atc ctg gcc cgg gag ttc     336
Ile Val Gln Pro Glu Val Gly Leu Leu Gly Ile Leu Ala Arg Glu Phe
            100                 105                 110

gac ggg gtg ctg cac ttc ctg atg cag gcc aaa ccc gag ccc ggc aac     384
Asp Gly Val Leu His Phe Leu Met Gln Ala Lys Pro Glu Pro Gly Asn
        115                 120                 125

gtc aac ggg ctg cag atc tcc ccc acg gtg cag gcc acg cgc agc aac     432
Val Asn Gly Leu Gln Ile Ser Pro Thr Val Gln Ala Thr Arg Ser Asn
    130                 135                 140

ttc gac gag gtg cac cac ggc cgg tcc acc ccg ttc ctc gac cac ttc     480
Phe Asp Glu Val His His Gly Arg Ser Thr Pro Phe Leu Asp His Phe
145                 150                 155                 160

atc cac cgc ccc ggc cgc cgg gtc ctg atc gac agc atc cag tcc gaa     528
Ile His Arg Pro Gly Arg Arg Val Leu Ile Asp Ser Ile Gln Ser Glu
                165                 170                 175

cag ggc gac tgg ttc ctg cac aag cgc aac cgc aac atg gtc gtc gag     576
Gln Gly Asp Trp Phe Leu His Lys Arg Asn Arg Asn Met Val Val Glu
            180                 185                 190

atc gac acc gac atc gag gcc gac gcc gcg ttc cgc tgg ctg acc ctc     624
Ile Asp Thr Asp Ile Glu Ala Asp Ala Ala Phe Arg Trp Leu Thr Leu
        195                 200                 205

ggg cag atc cgc cgg ctg atg ctc cag gac gac ctc gtc aac atg gac     672
Gly Gln Ile Arg Arg Leu Met Leu Gln Asp Asp Leu Val Asn Met Asp
    210                 215                 220
```

```
acc cgc agt gtg ctg gcc tgt ctg ccc acc gcg cac ggc acg ccc gac        720
Thr Arg Ser Val Leu Ala Cys Leu Pro Thr Ala His Gly Thr Pro Asp
225                 230                 235                 240

gac ggt gac gac tcc ttc ccg gcg gcg ctg cgc cgc tcc ctc tac ggg        768
Asp Gly Asp Asp Ser Phe Pro Ala Ala Leu Arg Arg Ser Leu Tyr Gly
                245                 250                 255

gag acc gcg ccg ttg cac gat ctg cac gcc atc acc agc tgc ctc acc        816
Glu Thr Ala Pro Leu His Asp Leu His Ala Ile Thr Ser Cys Leu Thr
            260                 265                 270

gac gtc cgg gcg ctg cgg gtg ctg cgc cag cag agc gtg ccg ctc gac        864
Asp Val Arg Ala Leu Arg Val Leu Arg Gln Gln Ser Val Pro Leu Asp
        275                 280                 285

gac gcc cgg cgg gac ggc tgg gag cgg acc ggg agc gcg atc cgg cat        912
Asp Ala Arg Arg Asp Gly Trp Glu Arg Thr Gly Ser Ala Ile Arg His
    290                 295                 300

cgc agc ggc agg cat ttc gag atc atg gcg gtg gag gtg acc gcg gag        960
Arg Ser Gly Arg His Phe Glu Ile Met Ala Val Glu Val Thr Ala Glu
305                 310                 315                 320

cgc cgt gaa gtg gcc tcg tgg acc cag ccg ttg ctg cgc ccg tgc tcg       1008
Arg Arg Glu Val Ala Ser Trp Thr Gln Pro Leu Leu Arg Pro Cys Ser
                325                 330                 335

cag gga ctg gcg gcc ctg atc acc cgg cgg atc aac ggg gtg ctg cac       1056
Gln Gly Leu Ala Ala Leu Ile Thr Arg Arg Ile Asn Gly Val Leu His
            340                 345                 350

gcc ctg gtg gcg gcg cgg tcg gag gtc ggc acg ctc aac gtc gcc gag       1104
Ala Leu Val Ala Ala Arg Ser Glu Val Gly Thr Leu Asn Val Ala Glu
        355                 360                 365

ttc gga ccg acc gtc cag tgc cgg ccc gac gag gcg gac ggc cag tcg       1152
Phe Gly Pro Thr Val Gln Cys Arg Pro Asp Glu Ala Asp Gly Gln Ser
    370                 375                 380

ccc ccg tac ctg gac cgg gtg ctg acg gcc gga gcc gac cgc gtc cgc       1200
Pro Pro Tyr Leu Asp Arg Val Leu Thr Ala Gly Ala Asp Arg Val Arg
385                 390                 395                 400

tac gac gtg gtg cag tcg gag gag ggc ggg cgc ttc tac cac gcg cgc       1248
Tyr Asp Val Val Gln Ser Glu Glu Gly Gly Arg Phe Tyr His Ala Arg
                405                 410                 415

aac cgc tat ctg gtg gtc gag gcg ggg ccg gag ctc gac acg ggc tgc       1296
Asn Arg Tyr Leu Val Val Glu Ala Gly Pro Glu Leu Asp Thr Gly Cys
            420                 425                 430

ccg ccc ggc ttc tgc tgg gct acc ttc ggc cag ctc acc gaa ctg ctc       1344
Pro Pro Gly Phe Cys Trp Ala Thr Phe Gly Gln Leu Thr Glu Leu Leu
        435                 440                 445

gcg cac ggc aac tat ctc aac gtc gaa ctc cgc acc ctc atg gcg tgc       1392
Ala His Gly Asn Tyr Leu Asn Val Glu Leu Arg Thr Leu Met Ala Cys
    450                 455                 460

gca cac gcc tcc tac tga                                               1410
```

```
Ala His Ala Ser Tyr
465


<210>  41
<211>  469
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  41

Val Gly Thr Val Glu Tyr Ala Val His Arg Arg Thr Ala Glu Arg Val
1               5                   10                  15


Arg Val Ser Ala Asp Thr Leu Asp Ser Pro Val Thr Ala Leu Ala Glu
            20                  25                  30


Val Pro Arg Trp Leu Glu Glu Tyr His Arg Ala His Arg Phe His Val
        35                  40                  45


Glu Pro Ile Pro Phe Asp Arg Leu Arg Arg Trp Ser Phe Glu Pro Gly
    50                  55                  60


Thr Gly Asp Leu Arg His Glu Thr Gly Arg Phe Phe Ser Val Glu Gly
65                  70                  75                  80


Leu Arg Thr Ser Ser Asp Ala Asp Pro Val Ala Arg Val Gln Pro Ile
                85                  90                  95


Ile Val Gln Pro Glu Val Gly Leu Leu Gly Ile Leu Ala Arg Glu Phe
            100                 105                 110


Asp Gly Val Leu His Phe Leu Met Gln Ala Lys Pro Glu Pro Gly Asn
        115                 120                 125


Val Asn Gly Leu Gln Ile Ser Pro Thr Val Gln Ala Thr Arg Ser Asn
    130                 135                 140


Phe Asp Glu Val His His Gly Arg Ser Thr Pro Phe Leu Asp His Phe
145                 150                 155                 160


Ile His Arg Pro Gly Arg Arg Val Leu Ile Asp Ser Ile Gln Ser Glu
                165                 170                 175


Gln Gly Asp Trp Phe Leu His Lys Arg Asn Arg Asn Met Val Val Glu
            180                 185                 190


Ile Asp Thr Asp Ile Glu Ala Asp Ala Ala Phe Arg Trp Leu Thr Leu
        195                 200                 205
```

```
Gly Gln Ile Arg Arg Leu Met Leu Gln Asp Asp Leu Val Asn Met Asp
    210                 215                 220

Thr Arg Ser Val Leu Ala Cys Leu Pro Thr Ala His Gly Thr Pro Asp
225                 230                 235                 240

Asp Gly Asp Asp Ser Phe Pro Ala Ala Leu Arg Arg Ser Leu Tyr Gly
                245                 250                 255

Glu Thr Ala Pro Leu His Asp Leu His Ala Ile Thr Ser Cys Leu Thr
            260                 265                 270

Asp Val Arg Ala Leu Arg Val Leu Arg Gln Gln Ser Val Pro Leu Asp
        275                 280                 285

Asp Ala Arg Arg Asp Gly Trp Glu Arg Thr Gly Ser Ala Ile Arg His
    290                 295                 300

Arg Ser Gly Arg His Phe Glu Ile Met Ala Val Glu Val Thr Ala Glu
305                 310                 315                 320

Arg Arg Glu Val Ala Ser Trp Thr Gln Pro Leu Leu Arg Pro Cys Ser
                325                 330                 335

Gln Gly Leu Ala Ala Leu Ile Thr Arg Arg Ile Asn Gly Val Leu His
            340                 345                 350

Ala Leu Val Ala Ala Arg Ser Glu Val Gly Thr Leu Asn Val Ala Glu
        355                 360                 365

Phe Gly Pro Thr Val Gln Cys Arg Pro Asp Glu Ala Asp Gly Gln Ser
    370                 375                 380

Pro Pro Tyr Leu Asp Arg Val Leu Thr Ala Gly Ala Asp Arg Val Arg
385                 390                 395                 400

Tyr Asp Val Val Gln Ser Glu Glu Gly Gly Arg Phe Tyr His Ala Arg
                405                 410                 415

Asn Arg Tyr Leu Val Val Glu Ala Gly Pro Glu Leu Asp Thr Gly Cys
            420                 425                 430

Pro Pro Gly Phe Cys Trp Ala Thr Phe Gly Gln Leu Thr Glu Leu Leu
        435                 440                 445
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Ala His Gly Asn Tyr Leu Asn Val Glu Leu Arg Thr Leu Met Ala Cys
450 455 460

Ala His Ala Ser Tyr
465

<210> 42
<211> 454
<212> PRT
<213> Streptomyces ambofaciens

<400> 42

Val Arg Val Ser Ala Asp Thr Leu Asp Ser Pro Val Thr Ala Leu Ala
1 5 10 15

Glu Val Pro Arg Trp Leu Glu Glu Tyr His Arg Ala His Arg Phe His
20 25 30

Val Glu Pro Ile Pro Phe Asp Arg Leu Arg Arg Trp Ser Phe Glu Pro
35 40 45

Gly Thr Gly Asp Leu Arg His Glu Thr Gly Arg Phe Phe Ser Val Glu
50 55 60

Gly Leu Arg Thr Ser Ser Asp Ala Asp Pro Val Ala Arg Val Gln Pro
65 70 75 80

Ile Ile Val Gln Pro Glu Val Gly Leu Leu Gly Ile Leu Ala Arg Glu
85 90 95

Phe Asp Gly Val Leu His Phe Leu Met Gln Ala Lys Pro Glu Pro Gly
100 105 110

Asn Val Asn Gly Leu Gln Ile Ser Pro Thr Val Gln Ala Thr Arg Ser
115 120 125

Asn Phe Asp Glu Val His His Gly Arg Ser Thr Pro Phe Leu Asp His
130 135 140

Phe Ile His Arg Pro Gly Arg Arg Val Leu Ile Asp Ser Ile Gln Ser
145 150 155 160

Glu Gln Gly Asp Trp Phe Leu His Lys Arg Asn Arg Asn Met Val Val
165 170 175

Glu Ile Asp Thr Asp Ile Glu Ala Asp Ala Ala Phe Arg Trp Leu Thr

```
            180                 185                 190

Leu Gly Gln Ile Arg Arg Leu Met Leu Gln Asp Asp Leu Val Asn Met
        195                 200                 205

Asp Thr Arg Ser Val Leu Ala Cys Leu Pro Thr Ala His Gly Thr Pro
    210                 215                 220

Asp Asp Gly Asp Asp Ser Phe Pro Ala Ala Leu Arg Arg Ser Leu Tyr
225                 230                 235                 240

Gly Glu Thr Ala Pro Leu His Asp Leu His Ala Ile Thr Ser Cys Leu
                245                 250                 255

Thr Asp Val Arg Ala Leu Arg Val Leu Arg Gln Gln Ser Val Pro Leu
            260                 265                 270

Asp Asp Ala Arg Arg Asp Gly Trp Glu Arg Thr Gly Ser Ala Ile Arg
        275                 280                 285

His Arg Ser Gly Arg His Phe Glu Ile Met Ala Val Glu Val Thr Ala
    290                 295                 300

Glu Arg Arg Glu Val Ala Ser Trp Thr Gln Pro Leu Leu Arg Pro Cys
305                 310                 315                 320

Ser Gln Gly Leu Ala Ala Leu Ile Thr Arg Arg Ile Asn Gly Val Leu
                325                 330                 335

His Ala Leu Val Ala Ala Arg Ser Glu Val Gly Thr Leu Asn Val Ala
            340                 345                 350

Glu Phe Gly Pro Thr Val Gln Cys Arg Pro Asp Glu Ala Asp Gly Gln
        355                 360                 365

Ser Pro Pro Tyr Leu Asp Arg Val Leu Thr Ala Gly Ala Asp Arg Val
    370                 375                 380

Arg Tyr Asp Val Val Gln Ser Glu Glu Gly Gly Arg Phe Tyr His Ala
385                 390                 395                 400

Arg Asn Arg Tyr Leu Val Val Glu Ala Gly Pro Glu Leu Asp Thr Gly
                405                 410                 415

Cys Pro Pro Gly Phe Cys Trp Ala Thr Phe Gly Gln Leu Thr Glu Leu
            420                 425                 430
```

```
Leu Ala His Gly Asn Tyr Leu Asn Val Glu Leu Arg Thr Leu Met Ala
        435                 440                 445


Cys Ala His Ala Ser Tyr
    450


<210>  43
<211>  1248
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1248)

<400>  43
atg ccg ggc ggg acg gac ggc gac tgc gcg cgg acg gcg gcc cgg cgt        48
Met Pro Gly Gly Thr Asp Gly Asp Cys Ala Arg Thr Ala Ala Arg Arg
1               5                   10                  15

cga acg cac ctg ccc gag tcc gga cga gac agc gcg acg cga gag gcg        96
Arg Thr His Leu Pro Glu Ser Gly Arg Asp Ser Ala Thr Arg Glu Ala
            20                  25                  30

aaa atg atc aat ctc ttc cag ccc cag atg ggg gcc gag gaa ctg gcg       144
Lys Met Ile Asn Leu Phe Gln Pro Gln Met Gly Ala Glu Glu Leu Ala
        35                  40                  45

gcg gtg tcc gag gtc ttc gac gac caa tgg ctc ggt cac gga ccc cgg       192
Ala Val Ser Glu Val Phe Asp Asp Gln Trp Leu Gly His Gly Pro Arg
    50                  55                  60

acc gcg gcg ttc gag tcc gcg ttc gcc gag cac ctc ggg gtc ggc ccc       240
Thr Ala Ala Phe Glu Ser Ala Phe Ala Glu His Leu Gly Val Gly Pro
65                  70                  75                  80

gag cac gtc gtc ttc ctc aac tcg ggc acc gcc ggc ctc ttc ctg gcc       288
Glu His Val Val Phe Leu Asn Ser Gly Thr Ala Gly Leu Phe Leu Ala
                85                  90                  95

ctg gag tcg ctc ggc ctg cgg ccc ggc gac gag gtc gtg ctc ccc tcg       336
Leu Glu Ser Leu Gly Leu Arg Pro Gly Asp Glu Val Val Leu Pro Ser
            100                 105                 110

ccc agc ttc ctc gcc gcg gcg aac gcc gta cag ctc tcg gga gcg cgc       384
Pro Ser Phe Leu Ala Ala Ala Asn Ala Val Gln Leu Ser Gly Ala Arg
        115                 120                 125

ccg gtg ttc tgc gac acc gac ccg cgg acg ctg aac ccc gcc ctg gag       432
Pro Val Phe Cys Asp Thr Asp Pro Arg Thr Leu Asn Pro Ala Leu Glu
    130                 135                 140

cac atc gag gcg gcc gtc acc ccg cgc acc agg gcc gtc atc gcg ctc       480
His Ile Glu Ala Ala Val Thr Pro Arg Thr Arg Ala Val Ile Ala Leu
145                 150                 155                 160
```

```
cac tac ggc ggc cac ccc ggc gac atc gtg cgc atc gcc gag cgc tgc      528
His Tyr Gly Gly His Pro Gly Asp Ile Val Arg Ile Ala Glu Arg Cys
                165                 170                 175

cgg gag cgg ggc atc acc ctg atc gag gac gcc gcg tgc tcc gtg gcc      576
Arg Glu Arg Gly Ile Thr Leu Ile Glu Asp Ala Ala Cys Ser Val Ala
            180                 185                 190

tcc cgc gtc gac ggc cga ccg gtc ggc acc ttc ggc gac ctc gcc atg      624
Ser Arg Val Asp Gly Arg Pro Val Gly Thr Phe Gly Asp Leu Ala Met
        195                 200                 205

tgg agc ttc gac gcc atg aag gtc ctg gtc acc ggc gac gga ggg atg      672
Trp Ser Phe Asp Ala Met Lys Val Leu Val Thr Gly Asp Gly Gly Met
    210                 215                 220

atc tac gtc aag gac ccc ggg gcg gcc gcc cgg atc cgg cgc ctc gcc      720
Ile Tyr Val Lys Asp Pro Gly Ala Ala Ala Arg Ile Arg Arg Leu Ala
225                 230                 235                 240

tac cac ggc ctc acg cgg tcc agc ggc ctg gga tac gcc agg gtc tcg      768
Tyr His Gly Leu Thr Arg Ser Ser Gly Leu Gly Tyr Ala Arg Val Ser
                245                 250                 255

gcg cgc tgg tgg gag atg gac gtc ccc gaa ccg ggc cgc cgc gtc atc      816
Ala Arg Trp Trp Glu Met Asp Val Pro Glu Pro Gly Arg Arg Val Ile
            260                 265                 270

ggg aac gac ctc acc gcg gcc atc ggc gcg gtc cag ttg cgc cgg ctt      864
Gly Asn Asp Leu Thr Ala Ala Ile Gly Ala Val Gln Leu Arg Arg Leu
        275                 280                 285

ccc ggc ttc gtg gcc cgc cgc agg gag atc gtc gcc ctg tac gac agc      912
Pro Gly Phe Val Ala Arg Arg Arg Glu Ile Val Ala Leu Tyr Asp Ser
    290                 295                 300

gaa ctg agc tcg ctg gag ggc gtg ctg aca ccg ccc gcg cca ccc gcg      960
Glu Leu Ser Ser Leu Glu Gly Val Leu Thr Pro Pro Ala Pro Pro Ala
305                 310                 315                 320

ggg cac gag tcc acg cac tac ttc tac tgg atc cag ctg gcc ccc ggc     1008
Gly His Glu Ser Thr His Tyr Phe Tyr Trp Ile Gln Leu Ala Pro Gly
                325                 330                 335

gtc cgg gac cgg gtg gca cgc gac ctg ctc acc gac ggc atc tac acc     1056
Val Arg Asp Arg Val Ala Arg Asp Leu Leu Thr Asp Gly Ile Tyr Thr
            340                 345                 350

acc ttc cgc tac gca cct ctg cac aag gtg ccc gcc tac ggc cac acc     1104
Thr Phe Arg Tyr Ala Pro Leu His Lys Val Pro Ala Tyr Gly His Thr
        355                 360                 365

gga ggc gaa ctg ccc ggc gtg gag cgg gcg tcc gaa cgg acc ctg tgc     1152
Gly Gly Glu Leu Pro Gly Val Glu Arg Ala Ser Glu Arg Thr Leu Cys
    370                 375                 380

ctg ccc ctg cac ccc ggc ctg tcg gac gcc gac gtc cgc acc gtc gtg     1200
Leu Pro Leu His Pro Gly Leu Ser Asp Ala Asp Val Arg Thr Val Val
385                 390                 395                 400

tcc tcc ctg cgc aga gcc ctg agc gcc gcg gat ccg gcc ccc gcc tga     1248
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Ser Ser Leu Arg Arg Ala Leu Ser Ala Ala Asp Pro Ala Pro Ala
                405                 410                 415


<210>  44
<211>  415
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  44

Met Pro Gly Gly Thr Asp Gly Asp Cys Ala Arg Thr Ala Ala Arg Arg
1               5                   10                  15


Arg Thr His Leu Pro Glu Ser Gly Arg Asp Ser Ala Thr Arg Glu Ala
            20                  25                  30


Lys Met Ile Asn Leu Phe Gln Pro Gln Met Gly Ala Glu Glu Leu Ala
        35                  40                  45


Ala Val Ser Glu Val Phe Asp Asp Gln Trp Leu Gly His Gly Pro Arg
    50                  55                  60


Thr Ala Ala Phe Glu Ser Ala Phe Ala Glu His Leu Gly Val Gly Pro
65                  70                  75                  80


Glu His Val Val Phe Leu Asn Ser Gly Thr Ala Gly Leu Phe Leu Ala
                85                  90                  95


Leu Glu Ser Leu Gly Leu Arg Pro Gly Asp Glu Val Val Leu Pro Ser
            100                 105                 110


Pro Ser Phe Leu Ala Ala Ala Asn Ala Val Gln Leu Ser Gly Ala Arg
        115                 120                 125


Pro Val Phe Cys Asp Thr Asp Pro Arg Thr Leu Asn Pro Ala Leu Glu
    130                 135                 140


His Ile Glu Ala Ala Val Thr Pro Arg Thr Arg Ala Val Ile Ala Leu
145                 150                 155                 160


His Tyr Gly Gly His Pro Gly Asp Ile Val Arg Ile Ala Glu Arg Cys
                165                 170                 175


Arg Glu Arg Gly Ile Thr Leu Ile Glu Asp Ala Ala Cys Ser Val Ala
            180                 185                 190


Ser Arg Val Asp Gly Arg Pro Val Gly Thr Phe Gly Asp Leu Ala Met
        195                 200                 205
```

```
Trp Ser Phe Asp Ala Met Lys Val Leu Val Thr Gly Asp Gly Gly Met
    210                 215                 220

Ile Tyr Val Lys Asp Pro Gly Ala Ala Ala Arg Ile Arg Arg Leu Ala
225                 230                 235                 240

Tyr His Gly Leu Thr Arg Ser Ser Gly Leu Gly Tyr Ala Arg Val Ser
                245                 250                 255

Ala Arg Trp Trp Glu Met Asp Val Pro Glu Pro Gly Arg Arg Val Ile
            260                 265                 270

Gly Asn Asp Leu Thr Ala Ala Ile Gly Ala Val Gln Leu Arg Arg Leu
        275                 280                 285

Pro Gly Phe Val Ala Arg Arg Arg Glu Ile Val Ala Leu Tyr Asp Ser
    290                 295                 300

Glu Leu Ser Ser Leu Glu Gly Val Leu Thr Pro Pro Ala Pro Pro Ala
305                 310                 315                 320

Gly His Glu Ser Thr His Tyr Phe Tyr Trp Ile Gln Leu Ala Pro Gly
                325                 330                 335

Val Arg Asp Arg Val Ala Arg Asp Leu Leu Thr Asp Gly Ile Tyr Thr
            340                 345                 350

Thr Phe Arg Tyr Ala Pro Leu His Lys Val Pro Ala Tyr Gly His Thr
        355                 360                 365

Gly Gly Glu Leu Pro Gly Val Glu Arg Ala Ser Glu Arg Thr Leu Cys
    370                 375                 380

Leu Pro Leu His Pro Gly Leu Ser Asp Ala Asp Val Arg Thr Val Val
385                 390                 395                 400

Ser Ser Leu Arg Arg Ala Leu Ser Ala Ala Asp Pro Ala Pro Ala
                405                 410                 415


<210>  45
<211>  720
<212>  DNA
<213>  Streptomyces ambofaciens

<220>
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<221>  CDS
<222>  (1)..(720)

<400>  45
atg tac gag aac gac agt gcc gcc gag gtc tac gac ctg ctc tac cag         48
Met Tyr Glu Asn Asp Ser Ala Ala Glu Val Tyr Asp Leu Leu Tyr Gln
1               5                   10                  15

gac cgc aag gac tac gcg ggt gag gcc gcc cgg gtc acc gac ctg atc         96
Asp Arg Lys Asp Tyr Ala Gly Glu Ala Ala Arg Val Thr Asp Leu Ile
            20                  25                  30

cgg gaa cgt acg ccg gac gcg gcc agc ctg ctc gac atc gcg tgc ggc        144
Arg Glu Arg Thr Pro Asp Ala Ala Ser Leu Leu Asp Ile Ala Cys Gly
        35                  40                  45

acc ggt acc cac ctg gag gcc ttc gcc aag ctc tac gac cgc gtg agc        192
Thr Gly Thr His Leu Glu Ala Phe Ala Lys Leu Tyr Asp Arg Val Ser
    50                  55                  60

ggc ctg gag ctg tcc gag tgg atg gcg gcc cgc gcc gag gag cgg ctc        240
Gly Leu Glu Leu Ser Glu Trp Met Ala Ala Arg Ala Glu Glu Arg Leu
65                  70                  75                  80

ccc ggc gtc acc ctc cac cgc ggt gac atg cgg gcg ttc gac ctc ggc        288
Pro Gly Val Thr Leu His Arg Gly Asp Met Arg Ala Phe Asp Leu Gly
                85                  90                  95

gag acg ttc gac gcc gtg gtc tgc atg ttc agc tcg atc ggg tac ctg        336
Glu Thr Phe Asp Ala Val Val Cys Met Phe Ser Ser Ile Gly Tyr Leu
            100                 105                 110

gag acc acg gcc gac ctg gag gac gcc gtc gcc gcc atg gcg cgg cac        384
Glu Thr Thr Ala Asp Leu Glu Asp Ala Val Ala Ala Met Ala Arg His
        115                 120                 125

ctg acc gcg gac ggt gtc ctg gcc gtc gaa ccg tgg tac ttc ccc gac        432
Leu Thr Ala Asp Gly Val Leu Ala Val Glu Pro Trp Tyr Phe Pro Asp
    130                 135                 140

acc ttc ctg gac ggc cac gtc tcc acc cac gcc ctg cgg acg gca ccg        480
Thr Phe Leu Asp Gly His Val Ser Thr His Ala Leu Arg Thr Ala Pro
145                 150                 155                 160

ggc gac cag ggc gtc gcc cgt gtc tcc cac tcg acc cgg gag ggc ggg        528
Gly Asp Gln Gly Val Ala Arg Val Ser His Ser Thr Arg Glu Gly Gly
                165                 170                 175

cgg acc cgg atg gag atc cac tac ctg atc gcg cac acc gcg gag ggc        576
Arg Thr Arg Met Glu Ile His Tyr Leu Ile Ala His Thr Ala Glu Gly
            180                 185                 190

atc cgg cac cgc agc gag gtg gac tac ctc acg ctg ttc tcg cgt gcg        624
Ile Arg His Arg Ser Glu Val Asp Tyr Leu Thr Leu Phe Ser Arg Ala
        195                 200                 205

gag tac gag gcc gcg tac cgc aag gcc ggc ctg gac gtc gag tac gtc        672
Glu Tyr Glu Ala Ala Tyr Arg Lys Ala Gly Leu Asp Val Glu Tyr Val
    210                 215                 220

gtg acg ggc gag ggc tca ccg ggc ttc ttc ctc ggc acg cgt cgc tga        720
```

Val Thr Gly Glu Gly Ser Pro Gly Phe Phe Leu Gly Thr Arg Arg
225 230 235

<210> 46
<211> 239
<212> PRT
<213> Streptomyces ambofaciens

<400> 46

Met Tyr Glu Asn Asp Ser Ala Ala Glu Val Tyr Asp Leu Leu Tyr Gln
1 5 10 15

Asp Arg Lys Asp Tyr Ala Gly Glu Ala Ala Arg Val Thr Asp Leu Ile
20 25 30

Arg Glu Arg Thr Pro Asp Ala Ala Ser Leu Leu Asp Ile Ala Cys Gly
35 40 45

Thr Gly Thr His Leu Glu Ala Phe Ala Lys Leu Tyr Asp Arg Val Ser
50 55 60

Gly Leu Glu Leu Ser Glu Trp Met Ala Ala Arg Ala Glu Glu Arg Leu
65 70 75 80

Pro Gly Val Thr Leu His Arg Gly Asp Met Arg Ala Phe Asp Leu Gly
85 90 95

Glu Thr Phe Asp Ala Val Val Cys Met Phe Ser Ser Ile Gly Tyr Leu
100 105 110

Glu Thr Thr Ala Asp Leu Glu Asp Ala Val Ala Ala Met Ala Arg His
115 120 125

Leu Thr Ala Asp Gly Val Leu Ala Val Glu Pro Trp Tyr Phe Pro Asp
130 135 140

Thr Phe Leu Asp Gly His Val Ser Thr His Ala Leu Arg Thr Ala Pro
145 150 155 160

Gly Asp Gln Gly Val Ala Arg Val Ser His Ser Thr Arg Glu Gly Gly
165 170 175

Arg Thr Arg Met Glu Ile His Tyr Leu Ile Ala His Thr Ala Glu Gly
180 185 190

Ile Arg His Arg Ser Glu Val Asp Tyr Leu Thr Leu Phe Ser Arg Ala
195 200 205

Glu Tyr Glu Ala Ala Tyr Arg Lys Ala Gly Leu Asp Val Glu Tyr Val
210 215 220

Val Thr Gly Glu Gly Ser Pro Gly Phe Phe Leu Gly Thr Arg Arg
225 230 235

<210> 47
<211> 1968
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(1968)

<400> 47
atg agt gac ctg ggt tct ggt gaa gaa ggg tcc gaa gaa gac gag tcg 48
Met Ser Asp Leu Gly Ser Gly Glu Glu Gly Ser Glu Glu Asp Glu Ser
1 5 10 15

gac gac gca ctc gcc ttc ctc gag ttc atc gcc cgg tcg gca cca cgg 96
Asp Asp Ala Leu Ala Phe Leu Glu Phe Ile Ala Arg Ser Ala Pro Arg
20 25 30

agc gaa tac gac cgg ctc atg gcc cgc gcc gaa cgc tcg ggc gcc gac 144
Ser Glu Tyr Asp Arg Leu Met Ala Arg Ala Glu Arg Ser Gly Ala Asp
35 40 45

gag gac cgg atg cgc cga ctg gag cgc ttc aac cgg ctc gcc ctc acc 192
Glu Asp Arg Met Arg Arg Leu Glu Arg Phe Asn Arg Leu Ala Leu Thr
50 55 60

gcg cag tcg atg atc gag tac cgc cgc gac cgg gag gcg gag ctc gcg 240
Ala Gln Ser Met Ile Glu Tyr Arg Arg Asp Arg Glu Ala Glu Leu Ala
65 70 75 80

gcc ctg gtc gac gcc gcg cac gag ttc gtc gcc gcc cgg cgg ggc aag 288
Ala Leu Val Asp Ala Ala His Glu Phe Val Ala Ala Arg Arg Gly Lys
85 90 95

gac ctg ctg gag tcc atc gcc cgc aga gca cgg ctg ctg ctg aag ctg 336
Asp Leu Leu Glu Ser Ile Ala Arg Arg Ala Arg Leu Leu Leu Lys Leu
100 105 110

gac gtc tcc tac gtc ggc ctg cac gag gag gac cgg ccc ggc acg gtg 384
Asp Val Ser Tyr Val Gly Leu His Glu Glu Asp Arg Pro Gly Thr Val
115 120 125

gtg ctg agc gcc gac ggc aac gcg gtc aag gtc gcc gag agc tac cgg 432
Val Leu Ser Ala Asp Gly Asn Ala Val Lys Val Ala Glu Ser Tyr Arg
130 135 140

ctg ccg gcc gac ggc gga ctg ggc gcc atg gtg cgc acc tgc cgc gct 480
Leu Pro Ala Asp Gly Gly Leu Gly Ala Met Val Arg Thr Cys Arg Ala
145 150 155 160

```
ccc ttc tgg acc ccg gac tac ctc ggg gac aac agc ttc acg cac gtc      528
Pro Phe Trp Thr Pro Asp Tyr Leu Gly Asp Asn Ser Phe Thr His Val
                165                 170                 175

gag gcc gtc gac gac atc gtc cgc gcc gaa ggc ctg cgc gcg gtc ctg      576
Glu Ala Val Asp Asp Ile Val Arg Ala Glu Gly Leu Arg Ala Val Leu
            180                 185                 190

gcc gtc ccg ctg tgc gcc ggg ggc gaa ccg atg ggg gtc ctc tac gtc      624
Ala Val Pro Leu Cys Ala Gly Gly Glu Pro Met Gly Val Leu Tyr Val
        195                 200                 205

gcc gac cgt cag gtg cgg cat ctg acc ccc aac gag gtc acc ctg ctg      672
Ala Asp Arg Gln Val Arg His Leu Thr Pro Asn Glu Val Thr Leu Leu
    210                 215                 220

tgc tcg ctc gcc gat ctg gcc gcg gtg gcg atc gag cgc aac cgg ctg      720
Cys Ser Leu Ala Asp Leu Ala Ala Val Ala Ile Glu Arg Asn Arg Leu
225                 230                 235                 240

gtc gag gag ctc cac gac acc atc ggg caa ctg cgc cag gac atc ggc      768
Val Glu Glu Leu His Asp Thr Ile Gly Gln Leu Arg Gln Asp Ile Gly
                245                 250                 255

gag gcc cgc acc gcc ctc gcg cgc acc cgc agg tcc gcc gac ctc cag      816
Glu Ala Arg Thr Ala Leu Ala Arg Thr Arg Arg Ser Ala Asp Leu Gln
            260                 265                 270

tcg cac ctg gtc acg cag gtg atg gac agg cgc ggc gcc gac tcg tta      864
Ser His Leu Val Thr Gln Val Met Asp Arg Arg Gly Ala Asp Ser Leu
        275                 280                 285

ctc gcg acg gcc gcc gag gcg ctc ggc ggc gga gcc ggc ctg tgc agc      912
Leu Ala Thr Ala Ala Glu Ala Leu Gly Gly Gly Ala Gly Leu Cys Ser
    290                 295                 300

ccg ctc ggg cgc ccg ctc gcc gag tac ggg acc ctg cgc ccc gtc gcc      960
Pro Leu Gly Arg Pro Leu Ala Glu Tyr Gly Thr Leu Arg Pro Val Ala
305                 310                 315                 320

ccc acg gaa ctg cgc gcg gcg tgc cgc cgg gcc gcc gag acc ggc cgg     1008
Pro Thr Glu Leu Arg Ala Ala Cys Arg Arg Ala Ala Glu Thr Gly Arg
                325                 330                 335

ccc acc tcc gtg gcc ccg ggg gtc tgg acg gtg ccc ctg ctt ccc ggg     1056
Pro Thr Ser Val Ala Pro Gly Val Trp Thr Val Pro Leu Leu Pro Gly
            340                 345                 350

ggc aac gcc ggc ttc ctg ctg acc gac ctc ggt ccg gac gcg gac cac     1104
Gly Asn Ala Gly Phe Leu Leu Thr Asp Leu Gly Pro Asp Ala Asp His
        355                 360                 365

acc gcc gtc ccc ctg ctc ccg atg gtc gcc cgc acc ctc gcg ctg cac     1152
Thr Ala Val Pro Leu Leu Pro Met Val Ala Arg Thr Leu Ala Leu His
    370                 375                 380

ctg cgc gtc cag cac gac gac tcc ccc aag gcg cag agc cac cag gag     1200
Leu Arg Val Gln His Asp Asp Ser Pro Lys Ala Gln Ser His Gln Glu
385                 390                 395                 400

ttc ttc gac gac ctg atc ggg gcg ccc cgc tca ccc acg ctc ctc agg     1248
```

```
Phe Phe Asp Asp Leu Ile Gly Ala Pro Arg Ser Pro Thr Leu Leu Arg
                405                 410                 415

gaa cgc gcc ctg atg ttc tcc ctc agc ttc cgc cgc ccg cac gtg gtg       1296
Glu Arg Ala Leu Met Phe Ser Leu Ser Phe Arg Arg Pro His Val Val
            420                 425                 430

ctg gtg gcg gac gga ccc cgc ggg acc tcg ccg cgg ctg gag gcc tcc       1344
Leu Val Ala Asp Gly Pro Arg Gly Thr Ser Pro Arg Leu Glu Ala Ser
        435                 440                 445

ggc gcc gac tac gcg aag gag ctc ggc ggg ctg tgc agc gtg cgg gac       1392
Gly Ala Asp Tyr Ala Lys Glu Leu Gly Gly Leu Cys Ser Val Arg Asp
    450                 455                 460

ggc gcc gtc gtc ctg ctg ctg ccc ggc gac gac ccc gtc gcc gtg gcg       1440
Gly Ala Val Val Leu Leu Leu Pro Gly Asp Asp Pro Val Ala Val Ala
465                 470                 475                 480

cag acc gcc gcc ccg gag ctg acc gac cgc gcc ggg cac ccc gtc acc       1488
Gln Thr Ala Ala Pro Glu Leu Thr Asp Arg Ala Gly His Pro Val Thr
                485                 490                 495

gtg ggg gtc gcg ggc ccc gcc tcg acc gtc gac ggc atc gcc gac gcg       1536
Val Gly Val Ala Gly Pro Ala Ser Thr Val Asp Gly Ile Ala Asp Ala
            500                 505                 510

cac cgt gag gcc gcg aag tgt ctg gag acc ctc cgc gcg ctc ggc ggc       1584
His Arg Glu Ala Ala Lys Cys Leu Glu Thr Leu Arg Ala Leu Gly Gly
        515                 520                 525

gac ggc ggc acc gcg tgc gcc tcc gac ctg ggt ttc ctc ggc atg ctc       1632
Asp Gly Gly Thr Ala Cys Ala Ser Asp Leu Gly Phe Leu Gly Met Leu
    530                 535                 540

ctc gcc gag gag aac gac gtc ccc ggt tac atc agg acg acg atc ggc       1680
Leu Ala Glu Glu Asn Asp Val Pro Gly Tyr Ile Arg Thr Thr Ile Gly
545                 550                 555                 560

ccc gtg gtc gac tac gac acc cac cgc ttc acg gat ctg gtt ccc act       1728
Pro Val Val Asp Tyr Asp Thr His Arg Phe Thr Asp Leu Val Pro Thr
                565                 570                 575

ctg agg gtg tac ctg gag tcg ggc agg agc ccc acg cgt gcc gca gag       1776
Leu Arg Val Tyr Leu Glu Ser Gly Arg Ser Pro Thr Arg Ala Ala Glu
            580                 585                 590

aca ctg cgc gtg cac ccg aac acc gtc tca cgg cgg ctg gag cgc atc       1824
Thr Leu Arg Val His Pro Asn Thr Val Ser Arg Arg Leu Glu Arg Ile
        595                 600                 605

ggc gta ctg ctg gga gag gac tgg cag tca ccg gag cgg gtg ctg gac       1872
Gly Val Leu Leu Gly Glu Asp Trp Gln Ser Pro Glu Arg Val Leu Asp
    610                 615                 620

ata caa ctg gcc ctg cgg ctc tat cag gtg cgc tcg gcg ctc tcc tcg       1920
Ile Gln Leu Ala Leu Arg Leu Tyr Gln Val Arg Ser Ala Leu Ser Ser
625                 630                 635                 640

caa ccg gcg tcc gag acc cgg gcc gtg ctc gga tcg ctg cgc gag tga       1968
Gln Pro Ala Ser Glu Thr Arg Ala Val Leu Gly Ser Leu Arg Glu
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645 650 655

<210> 48
<211> 655
<212> PRT
<213> Streptomyces ambofaciens

<400> 48

Met Ser Asp Leu Gly Ser Gly Glu Glu Gly Ser Glu Glu Asp Glu Ser
1 5 10 15

Asp Asp Ala Leu Ala Phe Leu Glu Phe Ile Ala Arg Ser Ala Pro Arg
20 25 30

Ser Glu Tyr Asp Arg Leu Met Ala Arg Ala Glu Arg Ser Gly Ala Asp
35 40 45

Glu Asp Arg Met Arg Arg Leu Glu Arg Phe Asn Arg Leu Ala Leu Thr
50 55 60

Ala Gln Ser Met Ile Glu Tyr Arg Arg Asp Arg Glu Ala Glu Leu Ala
65 70 75 80

Ala Leu Val Asp Ala Ala His Glu Phe Val Ala Ala Arg Arg Gly Lys
85 90 95

Asp Leu Leu Glu Ser Ile Ala Arg Arg Ala Arg Leu Leu Leu Lys Leu
100 105 110

Asp Val Ser Tyr Val Gly Leu His Glu Glu Asp Arg Pro Gly Thr Val
115 120 125

Val Leu Ser Ala Asp Gly Asn Ala Val Lys Val Ala Glu Ser Tyr Arg
130 135 140

Leu Pro Ala Asp Gly Gly Leu Gly Ala Met Val Arg Thr Cys Arg Ala
145 150 155 160

Pro Phe Trp Thr Pro Asp Tyr Leu Gly Asp Asn Ser Phe Thr His Val
165 170 175

Glu Ala Val Asp Asp Ile Val Arg Ala Glu Gly Leu Arg Ala Val Leu
180 185 190

Ala Val Pro Leu Cys Ala Gly Gly Glu Pro Met Gly Val Leu Tyr Val
195 200 205

```
Ala Asp Arg Gln Val Arg His Leu Thr Pro Asn Glu Val Thr Leu Leu
    210                 215                 220

Cys Ser Leu Ala Asp Leu Ala Ala Val Ala Ile Glu Arg Asn Arg Leu
225                 230                 235                 240

Val Glu Glu Leu His Asp Thr Ile Gly Gln Leu Arg Gln Asp Ile Gly
                245                 250                 255

Glu Ala Arg Thr Ala Leu Ala Arg Thr Arg Arg Ser Ala Asp Leu Gln
            260                 265                 270

Ser His Leu Val Thr Gln Val Met Asp Arg Arg Gly Ala Asp Ser Leu
        275                 280                 285

Leu Ala Thr Ala Ala Glu Ala Leu Gly Gly Gly Ala Gly Leu Cys Ser
    290                 295                 300

Pro Leu Gly Arg Pro Leu Ala Glu Tyr Gly Thr Leu Arg Pro Val Ala
305                 310                 315                 320

Pro Thr Glu Leu Arg Ala Ala Cys Arg Arg Ala Ala Glu Thr Gly Arg
                325                 330                 335

Pro Thr Ser Val Ala Pro Gly Val Trp Thr Val Pro Leu Leu Pro Gly
            340                 345                 350

Gly Asn Ala Gly Phe Leu Leu Thr Asp Leu Gly Pro Asp Ala Asp His
        355                 360                 365

Thr Ala Val Pro Leu Leu Pro Met Val Ala Arg Thr Leu Ala Leu His
    370                 375                 380

Leu Arg Val Gln His Asp Asp Ser Pro Lys Ala Gln Ser His Gln Glu
385                 390                 395                 400

Phe Phe Asp Asp Leu Ile Gly Ala Pro Arg Ser Pro Thr Leu Leu Arg
                405                 410                 415

Glu Arg Ala Leu Met Phe Ser Leu Ser Phe Arg Arg Pro His Val Val
            420                 425                 430

Leu Val Ala Asp Gly Pro Arg Gly Thr Ser Pro Arg Leu Glu Ala Ser
        435                 440                 445
```

```
Gly Ala Asp Tyr Ala Lys Glu Leu Gly Gly Leu Cys Ser Val Arg Asp
    450                 455                 460

Gly Ala Val Val Leu Leu Leu Pro Gly Asp Asp Pro Val Ala Val Ala
465                 470                 475                 480

Gln Thr Ala Ala Pro Glu Leu Thr Asp Arg Ala Gly His Pro Val Thr
                485                 490                 495

Val Gly Val Ala Gly Pro Ala Ser Thr Val Asp Gly Ile Ala Asp Ala
            500                 505                 510

His Arg Glu Ala Ala Lys Cys Leu Glu Thr Leu Arg Ala Leu Gly Gly
        515                 520                 525

Asp Gly Gly Thr Ala Cys Ala Ser Asp Leu Gly Phe Leu Gly Met Leu
    530                 535                 540

Leu Ala Glu Glu Asn Asp Val Pro Gly Tyr Ile Arg Thr Thr Ile Gly
545                 550                 555                 560

Pro Val Val Asp Tyr Asp Thr His Arg Phe Thr Asp Leu Val Pro Thr
                565                 570                 575

Leu Arg Val Tyr Leu Glu Ser Gly Arg Ser Pro Thr Arg Ala Ala Glu
            580                 585                 590

Thr Leu Arg Val His Pro Asn Thr Val Ser Arg Arg Leu Glu Arg Ile
        595                 600                 605

Gly Val Leu Leu Gly Glu Asp Trp Gln Ser Pro Glu Arg Val Leu Asp
    610                 615                 620

Ile Gln Leu Ala Leu Arg Leu Tyr Gln Val Arg Ser Ala Leu Ser Ser
625                 630                 635                 640

Gln Pro Ala Ser Glu Thr Arg Ala Val Leu Gly Ser Leu Arg Glu
                645                 650                 655


<210>  49
<211>  1749
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1749)
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<220>
<221>  CDS
<222>  (76)..(1749)

<220>
<221>  CDS
<222>  (97)..(1749)

<400>  49
atg tcc gca gtg gtg gcg tcc ctt ctg ctt tcc gtt ctt tct gcg agc       48
Met Ser Ala Val Val Ala Ser Leu Leu Leu Ser Val Leu Ser Ala Ser
1               5                   10                  15

gcg ctc acg cat cca ctc atc ctc atc gtg gaa aca gga gac tta cgc       96
Ala Leu Thr His Pro Leu Ile Leu Ile Val Glu Thr Gly Asp Leu Arg
            20                  25                  30

gtg tcg att gcg caa tac gcc cta cac gac atc acg aag cgc tac cac      144
Val Ser Ile Ala Gln Tyr Ala Leu His Asp Ile Thr Lys Arg Tyr His
        35                  40                  45

gac tgt gtc gtg ctc gac cgg gtc ggt ttc agc atc aag ccg ggc gag      192
Asp Cys Val Val Leu Asp Arg Val Gly Phe Ser Ile Lys Pro Gly Glu
    50                  55                  60

aag gtc ggc gtg atc ggc gac aac ggt tcc ggc aag tcc acg ctg ctc      240
Lys Val Gly Val Ile Gly Asp Asn Gly Ser Gly Lys Ser Thr Leu Leu
65                  70                  75                  80

aag atc ctc gcc ggc cgc gtg gag ccc gac aac ggc gcg ctc acc gtg      288
Lys Ile Leu Ala Gly Arg Val Glu Pro Asp Asn Gly Ala Leu Thr Val
                85                  90                  95

gtc gct ccc ggc ggc gtc ggc tac ctg gcg cag aca ctg gaa ctg ccc      336
Val Ala Pro Gly Gly Val Gly Tyr Leu Ala Gln Thr Leu Glu Leu Pro
            100                 105                 110

ctc gac gcc acc gtc cag gac gcc gtc gac ctg gcc ctg tcc gac ctg      384
Leu Asp Ala Thr Val Gln Asp Ala Val Asp Leu Ala Leu Ser Asp Leu
        115                 120                 125

cgc gag ctc gaa gcg gcg atg cgc gag gcc gag gcg gag ctg ggc gag      432
Arg Glu Leu Glu Ala Ala Met Arg Glu Ala Glu Ala Glu Leu Gly Glu
    130                 135                 140

agc gac gag aac ggc tcc gag cgc gag ctg tcc gcc ggc ctc cag cgc      480
Ser Asp Glu Asn Gly Ser Glu Arg Glu Leu Ser Ala Gly Leu Gln Arg
145                 150                 155                 160

tac gcc gct ctg gtc gag cag tac cag gcg cgt ggc ggc tac gag gcc      528
Tyr Ala Ala Leu Val Glu Gln Tyr Gln Ala Arg Gly Gly Tyr Glu Ala
                165                 170                 175

gac gtg cgc gtg gag gtc gcg ctg cac ggc ctc gga ctg ccg agc ctg      576
Asp Val Arg Val Glu Val Ala Leu His Gly Leu Gly Leu Pro Ser Leu
            180                 185                 190

gac cgc gac cgc aag ctc gga acc ctc tcc ggt ggc gaa cgc tcc cgc      624
Asp Arg Asp Arg Lys Leu Gly Thr Leu Ser Gly Gly Glu Arg Ser Arg
        195                 200                 205
```

```
ctc gcg ctc gcc gcg acc ctc gcc tcg tcg ccg gag ctg ctg ctc ctg       672
Leu Ala Leu Ala Ala Thr Leu Ala Ser Ser Pro Glu Leu Leu Leu Leu
    210                 215                 220

gac gaa ccg acc aac gac ctc gac gac cgg gcg atg gaa tgg ctg gag       720
Asp Glu Pro Thr Asn Asp Leu Asp Asp Arg Ala Met Glu Trp Leu Glu
225                 230                 235                 240

gac cac ctg gcc ggc cac cgc ggc acg gtg atc gcg gtc acc cac gac       768
Asp His Leu Ala Gly His Arg Gly Thr Val Ile Ala Val Thr His Asp
                245                 250                 255

cgg gtc ttc ctc gac cgg ctc acc acc acg atc ctg gag gtc gac tcc       816
Arg Val Phe Leu Asp Arg Leu Thr Thr Thr Ile Leu Glu Val Asp Ser
            260                 265                 270

ggc agc gtc acc cgc tac ggc aac ggc tac gag ggc tac ctg acg gcc       864
Gly Ser Val Thr Arg Tyr Gly Asn Gly Tyr Glu Gly Tyr Leu Thr Ala
        275                 280                 285

aag gcc gtg gaa cgc gag cgg cgg ctg cgg gag tac gag gag tgg cgt       912
Lys Ala Val Glu Arg Glu Arg Arg Leu Arg Glu Tyr Glu Glu Trp Arg
    290                 295                 300

gcc gaa ctc gac cgc aac cgc ggg ctg atc acc tcc aac gtg gcg cgg       960
Ala Glu Leu Asp Arg Asn Arg Gly Leu Ile Thr Ser Asn Val Ala Arg
305                 310                 315                 320

atg gac ggc atc ccg cgc aag atg tcc ctc tcc gtg ttc ggc cac ggc      1008
Met Asp Gly Ile Pro Arg Lys Met Ser Leu Ser Val Phe Gly His Gly
                325                 330                 335

gcc tac cgc agg cga ggg cgc gac cac ggc gcg atg gtg cgg atc cgc      1056
Ala Tyr Arg Arg Arg Gly Arg Asp His Gly Ala Met Val Arg Ile Arg
            340                 345                 350

aac gcg aag caa cgc gtg gcg cag ctg acc gag aac ccg gtc cac gct      1104
Asn Ala Lys Gln Arg Val Ala Gln Leu Thr Glu Asn Pro Val His Ala
        355                 360                 365

ccc gcc gac ccg ttg tcc ttc gcc gcc cgc atc gac acc gcg ggc ccg      1152
Pro Ala Asp Pro Leu Ser Phe Ala Ala Arg Ile Asp Thr Ala Gly Pro
    370                 375                 380

gag gcg gag gag gcg gtg gcc gaa ctc acc gac gtg cgc gtc gcg ggt      1200
Glu Ala Glu Glu Ala Val Ala Glu Leu Thr Asp Val Arg Val Ala Gly
385                 390                 395                 400

cgg ctc gcc gtg gac tcc ctg acg atc cgg ccc ggc gaa cgg ctg ctc      1248
Arg Leu Ala Val Asp Ser Leu Thr Ile Arg Pro Gly Glu Arg Leu Leu
                405                 410                 415

gtc aca ggt ccc aac ggt gcg ggc aag tcc acc ttg ttg cgg gtg ctg      1296
Val Thr Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Leu Arg Val Leu
            420                 425                 430

tcc ggg gaa ctg gag ccg gac ggc ggc tcg gtg cgc gtc ggc tgc cgg      1344
Ser Gly Glu Leu Glu Pro Asp Gly Gly Ser Val Arg Val Gly Cys Arg
        435                 440                 445
```

```
gtc ggt cat ctg cgg cag gac gag acg ccc tgg gcg ccc gga ctg acc      1392
Val Gly His Leu Arg Gln Asp Glu Thr Pro Trp Ala Pro Gly Leu Thr
    450                 455                 460

gtg ctg cgg gcc ttc gcc cag ggc cgg gag ggc tac ctg gag gac cac      1440
Val Leu Arg Ala Phe Ala Gln Gly Arg Glu Gly Tyr Leu Glu Asp His
465                 470                 475                 480

gcg gag aaa ctg ctg tcg ctc ggc ctg ttc agc ccg tcc gac ctg cgg      1488
Ala Glu Lys Leu Leu Ser Leu Gly Leu Phe Ser Pro Ser Asp Leu Arg
                485                 490                 495

cga cgc gtg aag gat ctg tcc tac ggg cag cgc cgc cgg atc gag atc      1536
Arg Arg Val Lys Asp Leu Ser Tyr Gly Gln Arg Arg Arg Ile Glu Ile
            500                 505                 510

gcc cgg ctg gtg agc gac ccg atg gac ctg ctg ctg ctg gac gag ccc      1584
Ala Arg Leu Val Ser Asp Pro Met Asp Leu Leu Leu Leu Asp Glu Pro
        515                 520                 525

acc aac cac ctc acc ccg gtg ctg gtg gag gag ttg gag cag gca ctc      1632
Thr Asn His Leu Thr Pro Val Leu Val Glu Glu Leu Glu Gln Ala Leu
    530                 535                 540

gcg gac tac cgc ggc gcc gtc gtg gtc gtc acc cac gac cgt cgg atg      1680
Ala Asp Tyr Arg Gly Ala Val Val Val Val Thr His Asp Arg Arg Met
545                 550                 555                 560

cgg tcc cgg ttc acc ggc gcc cgg ctg acc atg gga gac ggg cgc atc      1728
Arg Ser Arg Phe Thr Gly Ala Arg Leu Thr Met Gly Asp Gly Arg Ile
                565                 570                 575

gcc gag ttc agc gcc ggc tga                                          1749
Ala Glu Phe Ser Ala Gly
            580


<210>  50
<211>  582
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  50

Met Ser Ala Val Val Ala Ser Leu Leu Leu Ser Val Leu Ser Ala Ser
1               5                   10                  15


Ala Leu Thr His Pro Leu Ile Leu Ile Val Glu Thr Gly Asp Leu Arg
            20                  25                  30


Val Ser Ile Ala Gln Tyr Ala Leu His Asp Ile Thr Lys Arg Tyr His
        35                  40                  45


Asp Cys Val Val Leu Asp Arg Val Gly Phe Ser Ile Lys Pro Gly Glu
    50                  55                  60


Lys Val Gly Val Ile Gly Asp Asn Gly Ser Gly Lys Ser Thr Leu Leu
```

```
65                  70                  75                  80

Lys Ile Leu Ala Gly Arg Val Glu Pro Asp Asn Gly Ala Leu Thr Val
                85                  90                  95

Val Ala Pro Gly Gly Val Gly Tyr Leu Ala Gln Thr Leu Glu Leu Pro
            100                 105                 110

Leu Asp Ala Thr Val Gln Asp Ala Val Asp Leu Ala Leu Ser Asp Leu
        115                 120                 125

Arg Glu Leu Glu Ala Ala Met Arg Glu Ala Glu Ala Glu Leu Gly Glu
    130                 135                 140

Ser Asp Glu Asn Gly Ser Glu Arg Glu Leu Ser Ala Gly Leu Gln Arg
145                 150                 155                 160

Tyr Ala Ala Leu Val Glu Gln Tyr Gln Ala Arg Gly Gly Tyr Glu Ala
                165                 170                 175

Asp Val Arg Val Glu Val Ala Leu His Gly Leu Gly Leu Pro Ser Leu
            180                 185                 190

Asp Arg Asp Arg Lys Leu Gly Thr Leu Ser Gly Gly Glu Arg Ser Arg
        195                 200                 205

Leu Ala Leu Ala Ala Thr Leu Ala Ser Ser Pro Glu Leu Leu Leu Leu
    210                 215                 220

Asp Glu Pro Thr Asn Asp Leu Asp Asp Arg Ala Met Glu Trp Leu Glu
225                 230                 235                 240

Asp His Leu Ala Gly His Arg Gly Thr Val Ile Ala Val Thr His Asp
                245                 250                 255

Arg Val Phe Leu Asp Arg Leu Thr Thr Thr Ile Leu Glu Val Asp Ser
            260                 265                 270

Gly Ser Val Thr Arg Tyr Gly Asn Gly Tyr Glu Gly Tyr Leu Thr Ala
        275                 280                 285

Lys Ala Val Glu Arg Glu Arg Arg Leu Arg Glu Tyr Glu Glu Trp Arg
    290                 295                 300

Ala Glu Leu Asp Arg Asn Arg Gly Leu Ile Thr Ser Asn Val Ala Arg
305                 310                 315                 320
```

```
Met Asp Gly Ile Pro Arg Lys Met Ser Leu Ser Val Phe Gly His Gly
                325                 330                 335

Ala Tyr Arg Arg Arg Gly Arg Asp His Gly Ala Met Val Arg Ile Arg
            340                 345                 350

Asn Ala Lys Gln Arg Val Ala Gln Leu Thr Glu Asn Pro Val His Ala
        355                 360                 365

Pro Ala Asp Pro Leu Ser Phe Ala Ala Arg Ile Asp Thr Ala Gly Pro
    370                 375                 380

Glu Ala Glu Glu Ala Val Ala Glu Leu Thr Asp Val Arg Val Ala Gly
385                 390                 395                 400

Arg Leu Ala Val Asp Ser Leu Thr Ile Arg Pro Gly Glu Arg Leu Leu
                405                 410                 415

Val Thr Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Leu Arg Val Leu
            420                 425                 430

Ser Gly Glu Leu Glu Pro Asp Gly Gly Ser Val Arg Val Gly Cys Arg
        435                 440                 445

Val Gly His Leu Arg Gln Asp Glu Thr Pro Trp Ala Pro Gly Leu Thr
    450                 455                 460

Val Leu Arg Ala Phe Ala Gln Gly Arg Glu Gly Tyr Leu Glu Asp His
465                 470                 475                 480

Ala Glu Lys Leu Leu Ser Leu Gly Leu Phe Ser Pro Ser Asp Leu Arg
                485                 490                 495

Arg Arg Val Lys Asp Leu Ser Tyr Gly Gln Arg Arg Arg Ile Glu Ile
            500                 505                 510

Ala Arg Leu Val Ser Asp Pro Met Asp Leu Leu Leu Leu Asp Glu Pro
        515                 520                 525

Thr Asn His Leu Thr Pro Val Leu Val Glu Glu Leu Glu Gln Ala Leu
    530                 535                 540

Ala Asp Tyr Arg Gly Ala Val Val Val Val Thr His Asp Arg Arg Met
545                 550                 555                 560
```

Arg Ser Arg Phe Thr Gly Ala Arg Leu Thr Met Gly Asp Gly Arg Ile
565 570 575

Ala Glu Phe Ser Ala Gly
580

<210> 51
<211> 557
<212> PRT
<213> Streptomyces ambofaciens

<400> 51

Val Glu Thr Gly Asp Leu Arg Val Ser Ile Ala Gln Tyr Ala Leu His
1 5 10 15

Asp Ile Thr Lys Arg Tyr His Asp Cys Val Val Leu Asp Arg Val Gly
20 25 30

Phe Ser Ile Lys Pro Gly Glu Lys Val Gly Val Ile Gly Asp Asn Gly
35 40 45

Ser Gly Lys Ser Thr Leu Leu Lys Ile Leu Ala Gly Arg Val Glu Pro
50 55 60

Asp Asn Gly Ala Leu Thr Val Val Ala Pro Gly Gly Val Gly Tyr Leu
65 70 75 80

Ala Gln Thr Leu Glu Leu Pro Leu Asp Ala Thr Val Gln Asp Ala Val
85 90 95

Asp Leu Ala Leu Ser Asp Leu Arg Glu Leu Glu Ala Ala Met Arg Glu
100 105 110

Ala Glu Ala Glu Leu Gly Glu Ser Asp Glu Asn Gly Ser Glu Arg Glu
115 120 125

Leu Ser Ala Gly Leu Gln Arg Tyr Ala Ala Leu Val Glu Gln Tyr Gln
130 135 140

Ala Arg Gly Gly Tyr Glu Ala Asp Val Arg Val Glu Val Ala Leu His
145 150 155 160

Gly Leu Gly Leu Pro Ser Leu Asp Arg Asp Arg Lys Leu Gly Thr Leu
165 170 175

Ser Gly Gly Glu Arg Ser Arg Leu Ala Leu Ala Ala Thr Leu Ala Ser

```
            180                 185                 190

Ser Pro Glu Leu Leu Leu Leu Asp Glu Pro Thr Asn Asp Leu Asp Asp
    195                 200                 205

Arg Ala Met Glu Trp Leu Glu Asp His Leu Ala Gly His Arg Gly Thr
    210                 215                 220

Val Ile Ala Val Thr His Asp Arg Val Phe Leu Asp Arg Leu Thr Thr
225                 230                 235                 240

Thr Ile Leu Glu Val Asp Ser Gly Ser Val Thr Arg Tyr Gly Asn Gly
                245                 250                 255

Tyr Glu Gly Tyr Leu Thr Ala Lys Ala Val Glu Arg Glu Arg Arg Leu
            260                 265                 270

Arg Glu Tyr Glu Glu Trp Arg Ala Glu Leu Asp Arg Asn Arg Gly Leu
        275                 280                 285

Ile Thr Ser Asn Val Ala Arg Met Asp Gly Ile Pro Arg Lys Met Ser
    290                 295                 300

Leu Ser Val Phe Gly His Gly Ala Tyr Arg Arg Arg Gly Arg Asp His
305                 310                 315                 320

Gly Ala Met Val Arg Ile Arg Asn Ala Lys Gln Arg Val Ala Gln Leu
                325                 330                 335

Thr Glu Asn Pro Val His Ala Pro Ala Asp Pro Leu Ser Phe Ala Ala
            340                 345                 350

Arg Ile Asp Thr Ala Gly Pro Glu Ala Glu Glu Ala Val Ala Glu Leu
        355                 360                 365

Thr Asp Val Arg Val Ala Gly Arg Leu Ala Val Asp Ser Leu Thr Ile
    370                 375                 380

Arg Pro Gly Glu Arg Leu Leu Val Thr Gly Pro Asn Gly Ala Gly Lys
385                 390                 395                 400

Ser Thr Leu Leu Arg Val Leu Ser Gly Glu Leu Glu Pro Asp Gly Gly
                405                 410                 415

Ser Val Arg Val Gly Cys Arg Val Gly His Leu Arg Gln Asp Glu Thr
            420                 425                 430
```

```
Pro Trp Ala Pro Gly Leu Thr Val Leu Arg Ala Phe Ala Gln Gly Arg
        435                 440                 445


Glu Gly Tyr Leu Glu Asp His Ala Glu Lys Leu Leu Ser Leu Gly Leu
    450                 455                 460


Phe Ser Pro Ser Asp Leu Arg Arg Arg Val Lys Asp Leu Ser Tyr Gly
465                 470                 475                 480


Gln Arg Arg Arg Ile Glu Ile Ala Arg Leu Val Ser Asp Pro Met Asp
                485                 490                 495


Leu Leu Leu Leu Asp Glu Pro Thr Asn His Leu Thr Pro Val Leu Val
            500                 505                 510


Glu Glu Leu Glu Gln Ala Leu Ala Asp Tyr Arg Gly Ala Val Val Val
        515                 520                 525


Val Thr His Asp Arg Arg Met Arg Ser Arg Phe Thr Gly Ala Arg Leu
    530                 535                 540


Thr Met Gly Asp Gly Arg Ile Ala Glu Phe Ser Ala Gly
545                 550                 555


<210>  52
<211>  550
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  52

Val Ser Ile Ala Gln Tyr Ala Leu His Asp Ile Thr Lys Arg Tyr His
1               5                   10                  15


Asp Cys Val Val Leu Asp Arg Val Gly Phe Ser Ile Lys Pro Gly Glu
            20                  25                  30


Lys Val Gly Val Ile Gly Asp Asn Gly Ser Gly Lys Ser Thr Leu Leu
        35                  40                  45


Lys Ile Leu Ala Gly Arg Val Glu Pro Asp Asn Gly Ala Leu Thr Val
    50                  55                  60


Val Ala Pro Gly Gly Val Gly Tyr Leu Ala Gln Thr Leu Glu Leu Pro
65                  70                  75                  80
```

```
Leu Asp Ala Thr Val Gln Asp Ala Val Asp Leu Ala Leu Ser Asp Leu
                85                  90                  95

Arg Glu Leu Glu Ala Ala Met Arg Glu Ala Glu Ala Glu Leu Gly Glu
            100                 105                 110

Ser Asp Glu Asn Gly Ser Glu Arg Glu Leu Ser Ala Gly Leu Gln Arg
        115                 120                 125

Tyr Ala Ala Leu Val Glu Gln Tyr Gln Ala Arg Gly Gly Tyr Glu Ala
    130                 135                 140

Asp Val Arg Val Glu Val Ala Leu His Gly Leu Gly Leu Pro Ser Leu
145                 150                 155                 160

Asp Arg Asp Arg Lys Leu Gly Thr Leu Ser Gly Gly Glu Arg Ser Arg
                165                 170                 175

Leu Ala Leu Ala Ala Thr Leu Ala Ser Ser Pro Glu Leu Leu Leu Leu
            180                 185                 190

Asp Glu Pro Thr Asn Asp Leu Asp Asp Arg Ala Met Glu Trp Leu Glu
        195                 200                 205

Asp His Leu Ala Gly His Arg Gly Thr Val Ile Ala Val Thr His Asp
    210                 215                 220

Arg Val Phe Leu Asp Arg Leu Thr Thr Thr Ile Leu Glu Val Asp Ser
225                 230                 235                 240

Gly Ser Val Thr Arg Tyr Gly Asn Gly Tyr Glu Gly Tyr Leu Thr Ala
                245                 250                 255

Lys Ala Val Glu Arg Glu Arg Arg Leu Arg Glu Tyr Glu Glu Trp Arg
            260                 265                 270

Ala Glu Leu Asp Arg Asn Arg Gly Leu Ile Thr Ser Asn Val Ala Arg
        275                 280                 285

Met Asp Gly Ile Pro Arg Lys Met Ser Leu Ser Val Phe Gly His Gly
    290                 295                 300

Ala Tyr Arg Arg Arg Gly Arg Asp His Gly Ala Met Val Arg Ile Arg
305                 310                 315                 320

Asn Ala Lys Gln Arg Val Ala Gln Leu Thr Glu Asn Pro Val His Ala
```

```
                325                 330                 335

Pro Ala Asp Pro Leu Ser Phe Ala Ala Arg Ile Asp Thr Ala Gly Pro
            340                 345                 350

Glu Ala Glu Glu Ala Val Ala Glu Leu Thr Asp Val Arg Val Ala Gly
        355                 360                 365

Arg Leu Ala Val Asp Ser Leu Thr Ile Arg Pro Gly Glu Arg Leu Leu
    370                 375                 380

Val Thr Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Leu Arg Val Leu
385                 390                 395                 400

Ser Gly Glu Leu Glu Pro Asp Gly Gly Ser Val Arg Val Gly Cys Arg
                405                 410                 415

Val Gly His Leu Arg Gln Asp Glu Thr Pro Trp Ala Pro Gly Leu Thr
            420                 425                 430

Val Leu Arg Ala Phe Ala Gln Gly Arg Glu Gly Tyr Leu Glu Asp His
        435                 440                 445

Ala Glu Lys Leu Leu Ser Leu Gly Leu Phe Ser Pro Ser Asp Leu Arg
    450                 455                 460

Arg Arg Val Lys Asp Leu Ser Tyr Gly Gln Arg Arg Arg Ile Glu Ile
465                 470                 475                 480

Ala Arg Leu Val Ser Asp Pro Met Asp Leu Leu Leu Leu Asp Glu Pro
                485                 490                 495

Thr Asn His Leu Thr Pro Val Leu Val Glu Glu Leu Glu Gln Ala Leu
            500                 505                 510

Ala Asp Tyr Arg Gly Ala Val Val Val Val Thr His Asp Arg Arg Met
        515                 520                 525

Arg Ser Arg Phe Thr Gly Ala Arg Leu Thr Met Gly Asp Gly Arg Ile
    530                 535                 540

Ala Glu Phe Ser Ala Gly
545                 550
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<210> 53
<211> 1431

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<213>  Streptomyces ambofaciens


<220>
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gtg ccg cgc aac ggt atg cgt gtc gca ccg gcc gac gtg atg cag tcg        48
Val Pro Arg Asn Gly Met Arg Val Ala Pro Ala Asp Val Met Gln Ser
1               5                   10                  15

gac cgg gat gat cgc ttg tcc ggc ggc cgg atg cct agc ctc ggg agc        96
Asp Arg Asp Asp Arg Leu Ser Gly Gly Arg Met Pro Ser Leu Gly Ser
            20                  25                  30

aac cac agc ggt ctt tca cga gag ggg tcg acc atg ggc gat ctc agg       144
Asn His Ser Gly Leu Ser Arg Glu Gly Ser Thr Met Gly Asp Leu Arg
        35                  40                  45

aac cgc atc acc gag ctg gtc cgc gcg tac cac cgg gaa cag gcg ccc       192
Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His Arg Glu Gln Ala Pro
    50                  55                  60

ggg ggc ttc gtt ccc ggg acg acg cac gta ccg gtc tcc ggc gcg gtg       240
Gly Gly Phe Val Pro Gly Thr Thr His Val Pro Val Ser Gly Ala Val
65                  70                  75                  80

ctg agc gag gag gac cgg ctg gcg ctg gtg gag acg gcg ctg gag atg       288
Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu Thr Ala Leu Glu Met
                85                  90                  95

cgg atc gcg gcc ggc ccg gcc tcc cgg ggc ttc gag cgg cag ttc gcc       336
Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe Glu Arg Gln Phe Ala
            100                 105                 110

cgg tac ctc ggg ctc cgg aag gcg cac ctg acc aac tcc ggt tcc tcc       384
Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr Asn Ser Gly Ser Ser
        115                 120                 125
```

```
gcc aac ctc ctc gcc ctc ggc gcg ctc acc tcg ccg cag ctg gag gag        432
Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser Pro Gln Leu Glu Glu
    130                 135                 140

aga cgg ctg cgt ccg ggg gac gag gtc gtc acg gtc gcc gcc ggg ttc        480
Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr Val Ala Ala Gly Phe
145                 150                 155                 160

ccc acg acg gtc aac ccg atc ttc cac aac ggg ctg gtg ccc gtc ttc        528
Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly Leu Val Pro Val Phe
                165                 170                 175

gtg gac gtc gag ctc ggc acg tac aac acg acg ccc gag cgc atc gag        576
Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr Pro Glu Arg Ile Glu
            180                 185                 190

cgg gcc atc ggc ccc cgg acc agg gcg atc atg atc gcg cac gcc ctg        624
Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met Ile Ala His Ala Leu
        195                 200                 205

ggc aac ccc ttc gag gcc gaa gag gtg gcc cgc ctc gcg gac gag cgg        672
Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg Leu Ala Asp Glu Arg
    210                 215                 220

gag ctg ttc ctc atc gag gac aac tgc gac gcg gtg ggg tcc cgc tac        720
Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala Val Gly Ser Arg Tyr
225                 230                 235                 240

cgg ggc agg ctc acc ggc tcc ttc ggc gac ctg tcg acc gtc agc ttc        768
Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu Ser Thr Val Ser Phe
                245                 250                 255

tat ccc gcg cac cac atc gcg atg ggt gag ggg ggc tgc gtg ctc acc        816
Tyr Pro Ala His His Ile Ala Met Gly Glu Gly Gly Cys Val Leu Thr
            260                 265                 270

gac aac ctg gcc ctg gcg cgg atc gtg gaa tca ctg cgc gac tgg ggg        864
Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser Leu Arg Asp Trp Gly
        275                 280                 285

cgc gac tgc tgg tgc gag ccg ggt gag gac aac cgc tgc ctc aag cgg        912
Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn Arg Cys Leu Lys Arg
    290                 295                 300

ttc gac cag aag atg ggt gac ctg ccg ccc ggg tac gac cac aag tac        960
Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly Tyr Asp His Lys Tyr
305                 310                 315                 320

atc ttc tcg cac gtc ggt tac aac ctg aag tcg acc gac ctg cag gcg       1008
Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser Thr Asp Leu Gln Ala
                325                 330                 335

gcc ctc ggg ctg tcc cag ctg acc cgg atc gag gag ttc acc gag gcc       1056
Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu Glu Phe Thr Glu Ala
            340                 345                 350

agg cgc gcc aac tgg cgg cat ctg cgc gcc gcg ttg gac ggg ctg ccc       1104
Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala Leu Asp Gly Leu Pro
        355                 360                 365

ggt ctg ctg ctg cct cat gcc aca ccg ggc agc gat ccg agc tgg ttc       1152
```

Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser Asp Pro Ser Trp Phe
370 375 380

ggg ttc ctc atc acc gtg gac ccg gac gcc gcg tac agc agg gcg gcc 1200
Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala Tyr Ser Arg Ala Ala
385 390 395 400

ctg gtc gac cac ctg gaa tcg cgc cgg atc agc acc cgc cgc ctg ttc 1248
Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser Thr Arg Arg Leu Phe
405 410 415

ggg ggc aac ctc gtg cgg cac ccc gcc tac acc gac cgt cgg tac cgg 1296
Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr Asp Arg Arg Tyr Arg
420 425 430

gtg tcc ggc tcc ctg gag aac agc gac ctg atc acc gac cag acg ttc 1344
Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile Thr Asp Gln Thr Phe
435 440 445

tgg atc ggg gtc ttc ccc ggc atc acc ccg gag atg atc gcc tac gtc 1392
Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu Met Ile Ala Tyr Val
450 455 460

ggc gac acg atc cgg gag ttc gtg ctc aag cac tcc tga 1431
Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His Ser
465 470 475

<210> 54
<211> 476
<212> PRT
<213> Streptomyces ambofaciens

<400> 54

Val Pro Arg Asn Gly Met Arg Val Ala Pro Ala Asp Val Met Gln Ser
1 5 10 15

Asp Arg Asp Asp Arg Leu Ser Gly Gly Arg Met Pro Ser Leu Gly Ser
20 25 30

Asn His Ser Gly Leu Ser Arg Glu Gly Ser Thr Met Gly Asp Leu Arg
35 40 45

Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His Arg Glu Gln Ala Pro
50 55 60

Gly Gly Phe Val Pro Gly Thr Thr His Val Pro Val Ser Gly Ala Val
65 70 75 80

Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu Thr Ala Leu Glu Met
85 90 95

Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe Glu Arg Gln Phe Ala
100 105 110

```
Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr Asn Ser Gly Ser Ser
        115                 120                 125

Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser Pro Gln Leu Glu Glu
    130                 135                 140

Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr Val Ala Ala Gly Phe
145                 150                 155                 160

Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly Leu Val Pro Val Phe
                165                 170                 175

Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr Pro Glu Arg Ile Glu
            180                 185                 190

Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met Ile Ala His Ala Leu
        195                 200                 205

Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg Leu Ala Asp Glu Arg
    210                 215                 220

Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala Val Gly Ser Arg Tyr
225                 230                 235                 240

Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu Ser Thr Val Ser Phe
                245                 250                 255

Tyr Pro Ala His His Ile Ala Met Gly Glu Gly Gly Cys Val Leu Thr
            260                 265                 270

Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser Leu Arg Asp Trp Gly
        275                 280                 285

Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn Arg Cys Leu Lys Arg
    290                 295                 300

Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly Tyr Asp His Lys Tyr
305                 310                 315                 320

Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser Thr Asp Leu Gln Ala
                325                 330                 335

Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu Glu Phe Thr Glu Ala
            340                 345                 350
```

```
Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala Leu Asp Gly Leu Pro
        355                 360                 365

Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser Asp Pro Ser Trp Phe
    370                 375                 380

Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala Tyr Ser Arg Ala Ala
385                 390                 395                 400

Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser Thr Arg Arg Leu Phe
                405                 410                 415

Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr Asp Arg Arg Tyr Arg
            420                 425                 430

Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile Thr Asp Gln Thr Phe
        435                 440                 445

Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu Met Ile Ala Tyr Val
    450                 455                 460

Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His Ser
465                 470                 475


<210>  55
<211>  471
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  55

Met Arg Val Ala Pro Ala Asp Val Met Gln Ser Asp Arg Asp Asp Arg
1               5                   10                  15

Leu Ser Gly Gly Arg Met Pro Ser Leu Gly Ser Asn His Ser Gly Leu
            20                  25                  30

Ser Arg Glu Gly Ser Thr Met Gly Asp Leu Arg Asn Arg Ile Thr Glu
        35                  40                  45

Leu Val Arg Ala Tyr His Arg Glu Gln Ala Pro Gly Gly Phe Val Pro
    50                  55                  60

Gly Thr Thr His Val Pro Val Ser Gly Ala Val Leu Ser Glu Glu Asp
65                  70                  75                  80

Arg Leu Ala Leu Val Glu Thr Ala Leu Glu Met Arg Ile Ala Ala Gly
```

```
                85                  90                  95

Pro Ala Ser Arg Gly Phe Glu Arg Gln Phe Ala Arg Tyr Leu Gly Leu
            100                 105                 110

Arg Lys Ala His Leu Thr Asn Ser Gly Ser Ser Ala Asn Leu Leu Ala
        115                 120                 125

Leu Gly Ala Leu Thr Ser Pro Gln Leu Glu Glu Arg Arg Leu Arg Pro
    130                 135                 140

Gly Asp Glu Val Val Thr Val Ala Ala Gly Phe Pro Thr Thr Val Asn
145                 150                 155                 160

Pro Ile Phe His Asn Gly Leu Val Pro Val Phe Val Asp Val Glu Leu
                165                 170                 175

Gly Thr Tyr Asn Thr Thr Pro Glu Arg Ile Glu Arg Ala Ile Gly Pro
            180                 185                 190

Arg Thr Arg Ala Ile Met Ile Ala His Ala Leu Gly Asn Pro Phe Glu
        195                 200                 205

Ala Glu Glu Val Ala Arg Leu Ala Asp Glu Arg Glu Leu Phe Leu Ile
    210                 215                 220

Glu Asp Asn Cys Asp Ala Val Gly Ser Arg Tyr Arg Gly Arg Leu Thr
225                 230                 235                 240

Gly Ser Phe Gly Asp Leu Ser Thr Val Ser Phe Tyr Pro Ala His His
                245                 250                 255

Ile Ala Met Gly Glu Gly Gly Cys Val Leu Thr Asp Asn Leu Ala Leu
            260                 265                 270

Ala Arg Ile Val Glu Ser Leu Arg Asp Trp Gly Arg Asp Cys Trp Cys
        275                 280                 285

Glu Pro Gly Glu Asp Asn Arg Cys Leu Lys Arg Phe Asp Gln Lys Met
    290                 295                 300

Gly Asp Leu Pro Pro Gly Tyr Asp His Lys Tyr Ile Phe Ser His Val
305                 310                 315                 320

Gly Tyr Asn Leu Lys Ser Thr Asp Leu Gln Ala Ala Leu Gly Leu Ser
                325                 330                 335
```

```
Gln Leu Thr Arg Ile Glu Glu Phe Thr Glu Ala Arg Arg Ala Asn Trp
            340                 345                 350

Arg His Leu Arg Ala Ala Leu Asp Gly Leu Pro Gly Leu Leu Leu Pro
        355                 360                 365

His Ala Thr Pro Gly Ser Asp Pro Ser Trp Phe Gly Phe Leu Ile Thr
    370                 375                 380

Val Asp Pro Asp Ala Ala Tyr Ser Arg Ala Ala Leu Val Asp His Leu
385                 390                 395                 400

Glu Ser Arg Arg Ile Ser Thr Arg Arg Leu Phe Gly Gly Asn Leu Val
                405                 410                 415

Arg His Pro Ala Tyr Thr Asp Arg Arg Tyr Arg Val Ser Gly Ser Leu
            420                 425                 430

Glu Asn Ser Asp Leu Ile Thr Asp Gln Thr Phe Trp Ile Gly Val Phe
        435                 440                 445

Pro Gly Ile Thr Pro Glu Met Ile Ala Tyr Val Gly Asp Thr Ile Arg
    450                 455                 460

Glu Phe Val Leu Lys His Ser
465                 470


<210>  56
<211>  464
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  56

Val Met Gln Ser Asp Arg Asp Asp Arg Leu Ser Gly Gly Arg Met Pro
1               5                   10                  15

Ser Leu Gly Ser Asn His Ser Gly Leu Ser Arg Glu Gly Ser Thr Met
            20                  25                  30

Gly Asp Leu Arg Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His Arg
        35                  40                  45

Glu Gln Ala Pro Gly Gly Phe Val Pro Gly Thr Thr His Val Pro Val
    50                  55                  60
```

```
Ser Gly Ala Val Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu Thr
65                  70                  75                  80

Ala Leu Glu Met Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe Glu
                85                  90                  95

Arg Gln Phe Ala Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr Asn
            100                 105                 110

Ser Gly Ser Ser Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser Pro
        115                 120                 125

Gln Leu Glu Glu Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr Val
    130                 135                 140

Ala Ala Gly Phe Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly Leu
145                 150                 155                 160

Val Pro Val Phe Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr Pro
                165                 170                 175

Glu Arg Ile Glu Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met Ile
            180                 185                 190

Ala His Ala Leu Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg Leu
        195                 200                 205

Ala Asp Glu Arg Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala Val
    210                 215                 220

Gly Ser Arg Tyr Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu Ser
225                 230                 235                 240

Thr Val Ser Phe Tyr Pro Ala His His Ile Ala Met Gly Glu Gly Gly
                245                 250                 255

Cys Val Leu Thr Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser Leu
            260                 265                 270

Arg Asp Trp Gly Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn Arg
        275                 280                 285

Cys Leu Lys Arg Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly Tyr
    290                 295                 300

Asp His Lys Tyr Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser Thr
```

305 310 315 320

Asp Leu Gln Ala Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu Glu
325 330 335

Phe Thr Glu Ala Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala Leu
340 345 350

Asp Gly Leu Pro Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser Asp
355 360 365

Pro Ser Trp Phe Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala Tyr
370 375 380

Ser Arg Ala Ala Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser Thr
385 390 395 400

Arg Arg Leu Phe Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr Asp
405 410 415

Arg Arg Tyr Arg Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile Thr
420 425 430

Asp Gln Thr Phe Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu Met
435 440 445

Ile Ala Tyr Val Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His Ser
450 455 460

<210> 57
<211> 463
<212> PRT
<213> Streptomyces ambofaciens

<400> 57

Met Gln Ser Asp Arg Asp Asp Arg Leu Ser Gly Gly Arg Met Pro Ser
1 5 10 15

Leu Gly Ser Asn His Ser Gly Leu Ser Arg Glu Gly Ser Thr Met Gly
20 25 30

Asp Leu Arg Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His Arg Glu
35 40 45

Gln Ala Pro Gly Gly Phe Val Pro Gly Thr Thr His Val Pro Val Ser
50 55 60

```
Gly Ala Val Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu Thr Ala
65                  70                  75                  80

Leu Glu Met Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe Glu Arg
                85                  90                  95

Gln Phe Ala Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr Asn Ser
            100                 105                 110

Gly Ser Ser Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser Pro Gln
        115                 120                 125

Leu Glu Glu Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr Val Ala
    130                 135                 140

Ala Gly Phe Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly Leu Val
145                 150                 155                 160

Pro Val Phe Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr Pro Glu
                165                 170                 175

Arg Ile Glu Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met Ile Ala
            180                 185                 190

His Ala Leu Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg Leu Ala
        195                 200                 205

Asp Glu Arg Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala Val Gly
    210                 215                 220

Ser Arg Tyr Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu Ser Thr
225                 230                 235                 240

Val Ser Phe Tyr Pro Ala His His Ile Ala Met Gly Glu Gly Gly Cys
                245                 250                 255

Val Leu Thr Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser Leu Arg
            260                 265                 270

Asp Trp Gly Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn Arg Cys
        275                 280                 285

Leu Lys Arg Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly Tyr Asp
    290                 295                 300
```

His Lys Tyr Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser Thr Asp
305 310 315 320

Leu Gln Ala Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu Glu Phe
325 330 335

Thr Glu Ala Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala Leu Asp
340 345 350

Gly Leu Pro Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser Asp Pro
355 360 365

Ser Trp Phe Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala Tyr Ser
370 375 380

Arg Ala Ala Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser Thr Arg
385 390 395 400

Arg Leu Phe Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr Asp Arg
405 410 415

Arg Tyr Arg Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile Thr Asp
420 425 430

Gln Thr Phe Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu Met Ile
435 440 445

Ala Tyr Val Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His Ser
450 455 460

<210> 58
<211> 450
<212> PRT
<213> Streptomyces ambofaciens

<400> 58

Met Pro Ser Leu Gly Ser Asn His Ser Gly Leu Ser Arg Glu Gly Ser
1 5 10 15

Thr Met Gly Asp Leu Arg Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr
20 25 30

His Arg Glu Gln Ala Pro Gly Gly Phe Val Pro Gly Thr Thr His Val
35 40 45

Pro Val Ser Gly Ala Val Leu Ser Glu Glu Asp Arg Leu Ala Leu Val
50 55 60

```
Glu Thr Ala Leu Glu Met Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly
65                  70                  75                  80

Phe Glu Arg Gln Phe Ala Arg Tyr Leu Gly Leu Arg Lys Ala His Leu
                85                  90                  95

Thr Asn Ser Gly Ser Ser Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr
            100                 105                 110

Ser Pro Gln Leu Glu Glu Arg Arg Leu Arg Pro Gly Asp Glu Val Val
        115                 120                 125

Thr Val Ala Ala Gly Phe Pro Thr Thr Val Asn Pro Ile Phe His Asn
    130                 135                 140

Gly Leu Val Pro Val Phe Val Asp Val Glu Leu Gly Thr Tyr Asn Thr
145                 150                 155                 160

Thr Pro Glu Arg Ile Glu Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile
                165                 170                 175

Met Ile Ala His Ala Leu Gly Asn Pro Phe Glu Ala Glu Glu Val Ala
            180                 185                 190

Arg Leu Ala Asp Glu Arg Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp
        195                 200                 205

Ala Val Gly Ser Arg Tyr Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp
    210                 215                 220

Leu Ser Thr Val Ser Phe Tyr Pro Ala His His Ile Ala Met Gly Glu
225                 230                 235                 240

Gly Gly Cys Val Leu Thr Asp Asn Leu Ala Leu Ala Arg Ile Val Glu
                245                 250                 255

Ser Leu Arg Asp Trp Gly Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp
            260                 265                 270

Asn Arg Cys Leu Lys Arg Phe Asp Gln Lys Met Gly Asp Leu Pro Pro
        275                 280                 285

Gly Tyr Asp His Lys Tyr Ile Phe Ser His Val Gly Tyr Asn Leu Lys
    290                 295                 300
```

Ser Thr Asp Leu Gln Ala Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile
305 310 315 320

Glu Glu Phe Thr Glu Ala Arg Arg Ala Asn Trp Arg His Leu Arg Ala
325 330 335

Ala Leu Asp Gly Leu Pro Gly Leu Leu Leu Pro His Ala Thr Pro Gly
340 345 350

Ser Asp Pro Ser Trp Phe Gly Phe Leu Ile Thr Val Asp Pro Asp Ala
355 360 365

Ala Tyr Ser Arg Ala Ala Leu Val Asp His Leu Glu Ser Arg Arg Ile
370 375 380

Ser Thr Arg Arg Leu Phe Gly Gly Asn Leu Val Arg His Pro Ala Tyr
385 390 395 400

Thr Asp Arg Arg Tyr Arg Val Ser Gly Ser Leu Glu Asn Ser Asp Leu
405 410 415

Ile Thr Asp Gln Thr Phe Trp Ile Gly Val Phe Pro Gly Ile Thr Pro
420 425 430

Glu Met Ile Ala Tyr Val Gly Asp Thr Ile Arg Glu Phe Val Leu Lys
435 440 445

His Ser
450

<210> 59
<211> 433
<212> PRT
<213> Streptomyces ambofaciens

<400> 59

Met Gly Asp Leu Arg Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His
1 5 10 15

Arg Glu Gln Ala Pro Gly Gly Phe Val Pro Gly Thr Thr His Val Pro
20 25 30

Val Ser Gly Ala Val Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu
35 40 45

Thr Ala Leu Glu Met Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe

```
    50                  55                  60

Glu Arg Gln Phe Ala Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr
65                  70                  75                  80

Asn Ser Gly Ser Ser Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser
                85                  90                  95

Pro Gln Leu Glu Glu Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr
            100                 105                 110

Val Ala Ala Gly Phe Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly
        115                 120                 125

Leu Val Pro Val Phe Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr
    130                 135                 140

Pro Glu Arg Ile Glu Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met
145                 150                 155                 160

Ile Ala His Ala Leu Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg
                165                 170                 175

Leu Ala Asp Glu Arg Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala
            180                 185                 190

Val Gly Ser Arg Tyr Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu
        195                 200                 205

Ser Thr Val Ser Phe Tyr Pro Ala His His Ile Ala Met Gly Glu Gly
    210                 215                 220

Gly Cys Val Leu Thr Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser
225                 230                 235                 240

Leu Arg Asp Trp Gly Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn
                245                 250                 255

Arg Cys Leu Lys Arg Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly
            260                 265                 270

Tyr Asp His Lys Tyr Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser
        275                 280                 285

Thr Asp Leu Gln Ala Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu
    290                 295                 300
```

```
Glu Phe Thr Glu Ala Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala
305                 310                 315                 320

Leu Asp Gly Leu Pro Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser
                325                 330                 335

Asp Pro Ser Trp Phe Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala
            340                 345                 350

Tyr Ser Arg Ala Ala Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser
        355                 360                 365

Thr Arg Arg Leu Phe Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr
    370                 375                 380

Asp Arg Arg Tyr Arg Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile
385                 390                 395                 400

Thr Asp Gln Thr Phe Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu
                405                 410                 415

Met Ile Ala Tyr Val Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His
            420                 425                 430

Ser


<210>  60
<211>  1398
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1398)

<400>  60
atg gac gac acg atg gcc ggc gcc gac gcc gag gaa tgg gac ggc gat         48
Met Asp Asp Thr Met Ala Gly Ala Asp Ala Glu Glu Trp Asp Gly Asp
1               5                   10                  15

cag tta gac cgc gag gac cgg gcc tcc ctc cgc cgc gtc gcg ggg ctc         96
Gln Leu Asp Arg Glu Asp Arg Ala Ser Leu Arg Arg Val Ala Gly Leu
            20                  25                  30

tcc acc gaa ctg acc gac gtc tcc gag gtc gag tac cgc cag ctg cga        144
Ser Thr Glu Leu Thr Asp Val Ser Glu Val Glu Tyr Arg Gln Leu Arg
        35                  40                  45
```

```
ctc gag cgg gtg gtg ctc gtc ggc atc tgg acc tcg gga acg gcc gcg      192
Leu Glu Arg Val Val Leu Val Gly Ile Trp Thr Ser Gly Thr Ala Ala
    50                  55                  60

gag gcc gac agt tcg ctc gcc gag ctg gcg gcg ctc gcc gag acc gcg      240
Glu Ala Asp Ser Ser Leu Ala Glu Leu Ala Ala Leu Ala Glu Thr Ala
65                  70                  75                  80

ggc gcc ctc gtg ctg gac ggc gtc gtg cag cgc cgg cag aag ccg gac      288
Gly Ala Leu Val Leu Asp Gly Val Val Gln Arg Arg Gln Lys Pro Asp
                85                  90                  95

ccg gcg acg tac atc ggc tcg ggc aag gcg tcg cag ctg cgc gac atc      336
Pro Ala Thr Tyr Ile Gly Ser Gly Lys Ala Ser Gln Leu Arg Asp Ile
            100                 105                 110

gtc gag gag acc ggc gcc gac acc gtg gtg tgc gac ggg gaa ctg agc      384
Val Glu Glu Thr Gly Ala Asp Thr Val Val Cys Asp Gly Glu Leu Ser
        115                 120                 125

ccc agt cag ctg atg cac ctg gag gag gtc gtc ggg gtc aag gtc gtg      432
Pro Ser Gln Leu Met His Leu Glu Glu Val Val Gly Val Lys Val Val
    130                 135                 140

gac cgc acg gcc ctg atc ctg gac atc ttc gcg cag cac gcc cag tcc      480
Asp Arg Thr Ala Leu Ile Leu Asp Ile Phe Ala Gln His Ala Gln Ser
145                 150                 155                 160

cgg gag ggc aag gcg cag gtg gcg ctg gcg cag atg cag tac atg ctg      528
Arg Glu Gly Lys Ala Gln Val Ala Leu Ala Gln Met Gln Tyr Met Leu
                165                 170                 175

ccg cgg ctg cgc ggc tgg ggc cag tcg ctg tcc cgg cag atg ggc ggc      576
Pro Arg Leu Arg Gly Trp Gly Gln Ser Leu Ser Arg Gln Met Gly Gly
            180                 185                 190

ggt ggc ggc ggt ggc atg gcc acg cgc ggt ccc ggt gag acg aag atc      624
Gly Gly Gly Gly Gly Met Ala Thr Arg Gly Pro Gly Glu Thr Lys Ile
        195                 200                 205

gag acg gac cgg cgg cgg atc aac gac aag atg gcc agg ctc cgc cgg      672
Glu Thr Asp Arg Arg Arg Ile Asn Asp Lys Met Ala Arg Leu Arg Arg
    210                 215                 220

gag ctg gag cag ctg aag acc ggc cgg gac gtg aac cgg gag gag cga      720
Glu Leu Glu Gln Leu Lys Thr Gly Arg Asp Val Asn Arg Glu Glu Arg
225                 230                 235                 240

cgg cgc aac aag gtg ctg tcg gtc gcc ctc gcc ggc tac acc aac gcc      768
Arg Arg Asn Lys Val Leu Ser Val Ala Leu Ala Gly Tyr Thr Asn Ala
                245                 250                 255

ggc aag tca tcg ctg ctc aac cgc ctc acc gga gcc ggc gtg ctg gtg      816
Gly Lys Ser Ser Leu Leu Asn Arg Leu Thr Gly Ala Gly Val Leu Val
            260                 265                 270

gag aac gcc ctg ttc gcc acc ctg gac acg acc gtg cgg cgg gcg acg      864
Glu Asn Ala Leu Phe Ala Thr Leu Asp Thr Thr Val Arg Arg Ala Thr
        275                 280                 285

acg ccg agc ggg cgc ccc tac acc atc gcc gac acc gtg ggc ttc gta      912
```

```
Thr Pro Ser Gly Arg Pro Tyr Thr Ile Ala Asp Thr Val Gly Phe Val
    290                 295                 300

cgc cac ctc ccg cac cac ctg gtg gag gcg ttc cgt tcc acg atc gaa         960
Arg His Leu Pro His His Leu Val Glu Ala Phe Arg Ser Thr Ile Glu
305                 310                 315                 320

gag gtc gcg gac gcg cat ctg gtg ctg cac gtg gtc gac ggt tcg cac        1008
Glu Val Ala Asp Ala His Leu Val Leu His Val Val Asp Gly Ser His
                325                 330                 335

ccg gac ccc ggc gcg cag ctg gcc tcg gtg cgc gag gtg ctg cgg gac        1056
Pro Asp Pro Gly Ala Gln Leu Ala Ser Val Arg Glu Val Leu Arg Asp
            340                 345                 350

gtg ggc gcc ggc gag tcc acc gag gtc gtg gtc gtc aac aag gcc gat        1104
Val Gly Ala Gly Glu Ser Thr Glu Val Val Val Val Asn Lys Ala Asp
        355                 360                 365

gtc gcg gac ccg gac gtc ctc gcc cgt ctg ctg gag cag gag ccg gac        1152
Val Ala Asp Pro Asp Val Leu Ala Arg Leu Leu Glu Gln Glu Pro Asp
    370                 375                 380

gcg atc gtc gtg tcc gcc cgt tcg ggt cgg ggc atc gac gag ctg cgg        1200
Ala Ile Val Val Ser Ala Arg Ser Gly Arg Gly Ile Asp Glu Leu Arg
385                 390                 395                 400

gaa ctg atc gac cgc ctg ctg ccg cac ccc gag gtg gag gtg gag gtc        1248
Glu Leu Ile Asp Arg Leu Leu Pro His Pro Glu Val Glu Val Glu Val
                405                 410                 415

gtg atc ccc tac gac gag ggg agc ctg gtg gcg cgg gtg cac gac gag        1296
Val Ile Pro Tyr Asp Glu Gly Ser Leu Val Ala Arg Val His Asp Glu
            420                 425                 430

ggc gag gtg ctc agc acc gag cac acg ccg gag ggc acc ctg ctc acc        1344
Gly Glu Val Leu Ser Thr Glu His Thr Pro Glu Gly Thr Leu Leu Thr
        435                 440                 445

gcg cgg gtc cac ccc gac ctc gcc tcg gag ctt cgg acg ctt ccg cgg        1392
Ala Arg Val His Pro Asp Leu Ala Ser Glu Leu Arg Thr Leu Pro Arg
    450                 455                 460

ccg tga                                                                1398
Pro
465


<210>  61
<211>  465
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  61

Met Asp Asp Thr Met Ala Gly Ala Asp Ala Glu Glu Trp Asp Gly Asp
1               5                   10                  15


Gln Leu Asp Arg Glu Asp Arg Ala Ser Leu Arg Arg Val Ala Gly Leu
            20                  25                  30
```

```
Ser Thr Glu Leu Thr Asp Val Ser Glu Val Glu Tyr Arg Gln Leu Arg
        35                  40                  45

Leu Glu Arg Val Val Leu Val Gly Ile Trp Thr Ser Gly Thr Ala Ala
    50                  55                  60

Glu Ala Asp Ser Ser Leu Ala Glu Leu Ala Ala Leu Ala Glu Thr Ala
65                  70                  75                  80

Gly Ala Leu Val Leu Asp Gly Val Val Gln Arg Arg Gln Lys Pro Asp
                85                  90                  95

Pro Ala Thr Tyr Ile Gly Ser Gly Lys Ala Ser Gln Leu Arg Asp Ile
            100                 105                 110

Val Glu Glu Thr Gly Ala Asp Thr Val Val Cys Asp Gly Glu Leu Ser
        115                 120                 125

Pro Ser Gln Leu Met His Leu Glu Glu Val Val Gly Val Lys Val Val
    130                 135                 140

Asp Arg Thr Ala Leu Ile Leu Asp Ile Phe Ala Gln His Ala Gln Ser
145                 150                 155                 160

Arg Glu Gly Lys Ala Gln Val Ala Leu Ala Gln Met Gln Tyr Met Leu
                165                 170                 175

Pro Arg Leu Arg Gly Trp Gly Gln Ser Leu Ser Arg Gln Met Gly Gly
            180                 185                 190

Gly Gly Gly Gly Gly Met Ala Thr Arg Gly Pro Gly Glu Thr Lys Ile
        195                 200                 205

Glu Thr Asp Arg Arg Arg Ile Asn Asp Lys Met Ala Arg Leu Arg Arg
    210                 215                 220

Glu Leu Glu Gln Leu Lys Thr Gly Arg Asp Val Asn Arg Glu Glu Arg
225                 230                 235                 240

Arg Arg Asn Lys Val Leu Ser Val Ala Leu Ala Gly Tyr Thr Asn Ala
                245                 250                 255

Gly Lys Ser Ser Leu Leu Asn Arg Leu Thr Gly Ala Gly Val Leu Val
            260                 265                 270
```

```
Glu Asn Ala Leu Phe Ala Thr Leu Asp Thr Thr Val Arg Arg Ala Thr
        275                 280                 285

Thr Pro Ser Gly Arg Pro Tyr Thr Ile Ala Asp Thr Val Gly Phe Val
    290                 295                 300

Arg His Leu Pro His His Leu Val Glu Ala Phe Arg Ser Thr Ile Glu
305                 310                 315                 320

Glu Val Ala Asp Ala His Leu Val Leu His Val Val Asp Gly Ser His
                325                 330                 335

Pro Asp Pro Gly Ala Gln Leu Ala Ser Val Arg Glu Val Leu Arg Asp
            340                 345                 350

Val Gly Ala Gly Glu Ser Thr Glu Val Val Val Val Asn Lys Ala Asp
        355                 360                 365

Val Ala Asp Pro Asp Val Leu Ala Arg Leu Leu Glu Gln Glu Pro Asp
    370                 375                 380

Ala Ile Val Val Ser Ala Arg Ser Gly Arg Gly Ile Asp Glu Leu Arg
385                 390                 395                 400

Glu Leu Ile Asp Arg Leu Leu Pro His Pro Glu Val Glu Val Glu Val
                405                 410                 415

Val Ile Pro Tyr Asp Glu Gly Ser Leu Val Ala Arg Val His Asp Glu
            420                 425                 430

Gly Glu Val Leu Ser Thr Glu His Thr Pro Glu Gly Thr Leu Leu Thr
        435                 440                 445

Ala Arg Val His Pro Asp Leu Ala Ser Glu Leu Arg Thr Leu Pro Arg
    450                 455                 460

Pro
465


<210>  62
<211>  1044
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
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<222>  (1)..(1044)

<400>  62
atg cga gta ctc att atc ggg ggt tca cag ttc gtg ggc cgg gcc ttc        48
Met Arg Val Leu Ile Ile Gly Gly Ser Gln Phe Val Gly Arg Ala Phe
1               5                   10                  15

gcc gcc gag gca ctg gcc gcg ggg cac cgg gtc acc acg ttc aac cgg        96
Ala Ala Glu Ala Leu Ala Ala Gly His Arg Val Thr Thr Phe Asn Arg
            20                  25                  30

ggt gtc agc ggc acc gac ctg ccc ggc gtc gag gcg gtc agg ggc gac       144
Gly Val Ser Gly Thr Asp Leu Pro Gly Val Glu Ala Val Arg Gly Asp
        35                  40                  45

cgc gag gtg gcc ggc gac ctg gag cgg ctg gtg tcc gga agg cac tgg       192
Arg Glu Val Ala Gly Asp Leu Glu Arg Leu Val Ser Gly Arg His Trp
    50                  55                  60

gac gcg gtc gtg gac acc tgc ggt tac gtg ccc cgc acg gtg ggg gcc       240
Asp Ala Val Val Asp Thr Cys Gly Tyr Val Pro Arg Thr Val Gly Ala
65                  70                  75                  80

tcg gcc gcg gcg ctg tcc ggg cac gcg gac acc tac ctc tac gtc tcc       288
Ser Ala Ala Ala Leu Ser Gly His Ala Asp Thr Tyr Leu Tyr Val Ser
                85                  90                  95

agc atc gcc tgc ctg ccc gac tgg gcg cag gcg gtc cgt ccg gtg gac       336
Ser Ile Ala Cys Leu Pro Asp Trp Ala Gln Ala Val Arg Pro Val Asp
            100                 105                 110

gac gac tca cct gcc cac gac tgc ccg ccg gac gcc gga ccg gac cac       384
Asp Asp Ser Pro Ala His Asp Cys Pro Pro Asp Ala Gly Pro Asp His
        115                 120                 125

gcc gac ggt gac tac ggc gtc ctg aag gcc ggc tgc gag cgc gcc gtg       432
Ala Asp Gly Asp Tyr Gly Val Leu Lys Ala Gly Cys Glu Arg Ala Val
    130                 135                 140

gac cgg cac ttc gcg ggc cgg acc ctg cac ctg cgg gcc ggt gtc atc       480
Asp Arg His Phe Ala Gly Arg Thr Leu His Leu Arg Ala Gly Val Ile
145                 150                 155                 160

ctc ggg ccg cac gac acc atg cgc atg ctc gac gcc tgg ctg tgg cgc       528
Leu Gly Pro His Asp Thr Met Arg Met Leu Asp Ala Trp Leu Trp Arg
                165                 170                 175

atg cgc gtc gcc gag ggg gag cac cgc cgg gtg ctc gcc ccg ggc aac       576
Met Arg Val Ala Glu Gly Glu His Arg Arg Val Leu Ala Pro Gly Asn
            180                 185                 190

ccc gag gtg ggc atg cgc ctg atc gac gta cgc gat gtc gcc gtc ttc       624
Pro Glu Val Gly Met Arg Leu Ile Asp Val Arg Asp Val Ala Val Phe
        195                 200                 205

ggc ctc gac tgc ctc gcg gac ggc cgt acc ggc gcc ttc atc gtc aac       672
Gly Leu Asp Cys Leu Ala Asp Gly Arg Thr Gly Ala Phe Ile Val Asn
    210                 215                 220

ccg ccg gag aag aac acc acc ttc ggg gag ttg ctc acg gag tgc gtc       720
Pro Pro Glu Lys Asn Thr Thr Phe Gly Glu Leu Leu Thr Glu Cys Val
```

```
225                 230                 235                 240

aag gcc acc ggt tcg gcc gcg gag ccg gtg tgg gtc gac gag ggg ttc       768
Lys Ala Thr Gly Ser Ala Ala Glu Pro Val Trp Val Asp Glu Gly Phe
                245                 250                 255

ctc gcc gag cac ggc gtg agt ccg tgg acg gac ctg ccg atg tgg gtg       816
Leu Ala Glu His Gly Val Ser Pro Trp Thr Asp Leu Pro Met Trp Val
            260                 265                 270

ccc gac acc gcg cgg gac acc ctc gtg tgg gcg gcc gga gca ccg cgc       864
Pro Asp Thr Ala Arg Asp Thr Leu Val Trp Ala Ala Gly Ala Pro Arg
        275                 280                 285

gcc cgg gcc gcg ggt ctg gcc tgc cgg ccc ttc tcc gac acc gtg cgg       912
Ala Arg Ala Ala Gly Leu Ala Cys Arg Pro Phe Ser Asp Thr Val Arg
    290                 295                 300

gac gcc tgg gag gtc gtc cgg gac cgg ccc gtc ccg gaa ctg ccg ctc       960
Asp Ala Trp Glu Val Val Arg Asp Arg Pro Val Pro Glu Leu Pro Leu
305                 310                 315                 320

gcg gcc ggc tgc ggc ctg tcc ctg agc cgg gag aag gag ctg ctc gcc      1008
Ala Ala Gly Cys Gly Leu Ser Leu Ser Arg Glu Lys Glu Leu Leu Ala
                325                 330                 335

gcc tgg gac gct cgc ggc ggt gcg gcg gcg ggc tga                      1044
Ala Trp Asp Ala Arg Gly Gly Ala Ala Ala Gly
            340                 345


<210>  63
<211>  347
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  63

Met Arg Val Leu Ile Ile Gly Gly Ser Gln Phe Val Gly Arg Ala Phe
1               5                   10                  15


Ala Ala Glu Ala Leu Ala Ala Gly His Arg Val Thr Thr Phe Asn Arg
            20                  25                  30


Gly Val Ser Gly Thr Asp Leu Pro Gly Val Glu Ala Val Arg Gly Asp
        35                  40                  45


Arg Glu Val Ala Gly Asp Leu Glu Arg Leu Val Ser Gly Arg His Trp
    50                  55                  60


Asp Ala Val Val Asp Thr Cys Gly Tyr Val Pro Arg Thr Val Gly Ala
65                  70                  75                  80


Ser Ala Ala Ala Leu Ser Gly His Ala Asp Thr Tyr Leu Tyr Val Ser
                85                  90                  95
```

```
Ser Ile Ala Cys Leu Pro Asp Trp Ala Gln Ala Val Arg Pro Val Asp
            100                 105                 110

Asp Asp Ser Pro Ala His Asp Cys Pro Pro Asp Ala Gly Pro Asp His
        115                 120                 125

Ala Asp Gly Asp Tyr Gly Val Leu Lys Ala Gly Cys Glu Arg Ala Val
    130                 135                 140

Asp Arg His Phe Ala Gly Arg Thr Leu His Leu Arg Ala Gly Val Ile
145                 150                 155                 160

Leu Gly Pro His Asp Thr Met Arg Met Leu Asp Ala Trp Leu Trp Arg
                165                 170                 175

Met Arg Val Ala Glu Gly Glu His Arg Arg Val Leu Ala Pro Gly Asn
            180                 185                 190

Pro Glu Val Gly Met Arg Leu Ile Asp Val Arg Asp Val Ala Val Phe
        195                 200                 205

Gly Leu Asp Cys Leu Ala Asp Gly Arg Thr Gly Ala Phe Ile Val Asn
    210                 215                 220

Pro Pro Glu Lys Asn Thr Thr Phe Gly Glu Leu Leu Thr Glu Cys Val
225                 230                 235                 240

Lys Ala Thr Gly Ser Ala Ala Glu Pro Val Trp Val Asp Glu Gly Phe
                245                 250                 255

Leu Ala Glu His Gly Val Ser Pro Trp Thr Asp Leu Pro Met Trp Val
            260                 265                 270

Pro Asp Thr Ala Arg Asp Thr Leu Val Trp Ala Ala Gly Ala Pro Arg
        275                 280                 285

Ala Arg Ala Ala Gly Leu Ala Cys Arg Pro Phe Ser Asp Thr Val Arg
    290                 295                 300

Asp Ala Trp Glu Val Val Arg Asp Arg Pro Val Pro Glu Leu Pro Leu
305                 310                 315                 320

Ala Ala Gly Cys Gly Leu Ser Leu Ser Arg Glu Lys Glu Leu Leu Ala
                325                 330                 335
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Ala Trp Asp Ala Arg Gly Gly Ala Ala Ala Gly
340 345

<210> 64
<211> 1041
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(1041)

<400> 64
atg acc gcc ctg ggt act tct gct gaa ccg ttc gcc gca ccc ggc ccg 48
Met Thr Ala Leu Gly Thr Ser Ala Glu Pro Phe Ala Ala Pro Gly Pro
1 5 10 15

ccg cgg ccg gaa gcg tcc ccg gtg ctg cgc ttc gga gcg atc ggc tgc 96
Pro Arg Pro Glu Ala Ser Pro Val Leu Arg Phe Gly Ala Ile Gly Cys
20 25 30

ggc gac atc gcg ggc cgt cgc acc ctg ccc gcc ctg ctc tcc acc ccc 144
Gly Asp Ile Ala Gly Arg Arg Thr Leu Pro Ala Leu Leu Ser Thr Pro
35 40 45

ggc acc gtg ctg acc tgc gtc ggc agc cgc gac gcg gac cgg gcc aag 192
Gly Thr Val Leu Thr Cys Val Gly Ser Arg Asp Ala Asp Arg Ala Lys
50 55 60

gcc ctg ggc agg cac ttc gac tgc gag gcg gtc gcg ccc tac gag gcc 240
Ala Leu Gly Arg His Phe Asp Cys Glu Ala Val Ala Pro Tyr Glu Ala
65 70 75 80

ctg ctg gaa cgc ccc gac gtg gac gcc gtc tac atc gcg gtg ccc agc 288
Leu Leu Glu Arg Pro Asp Val Asp Ala Val Tyr Ile Ala Val Pro Ser
85 90 95

atg ctg cac gcc gaa tgg gcc gcg gcg gcg ctg cgg gcg ggc aaa cac 336
Met Leu His Ala Glu Trp Ala Ala Ala Ala Leu Arg Ala Gly Lys His
100 105 110

gtc ctc gtg gag aag ccc gcc gcc gcc aac cac gcc gac gcg gcc cgc 384
Val Leu Val Glu Lys Pro Ala Ala Ala Asn His Ala Asp Ala Ala Arg
115 120 125

ctg ttc gcc atg gcc cgg gag cgc gga ctg gta ctg atg gag aac ttc 432
Leu Phe Ala Met Ala Arg Glu Arg Gly Leu Val Leu Met Glu Asn Phe
130 135 140

atg ttc ctc cac cac tct caa cac gcc acc gtc aaa gcc ctg ttg gag 480
Met Phe Leu His His Ser Gln His Ala Thr Val Lys Ala Leu Leu Glu
145 150 155 160

gcc ggt gcc atc gga gag ctg cgc acc ttc tcc gcc gcc ttc acc atc 528
Ala Gly Ala Ile Gly Glu Leu Arg Thr Phe Ser Ala Ala Phe Thr Ile
165 170 175

ccg ccg cgc gcc gac gac gac atg cgc tac cga ccc gac atc ggc ggc 576
Pro Pro Arg Ala Asp Asp Asp Met Arg Tyr Arg Pro Asp Ile Gly Gly

180 185 190

ggc gca ctg ctc gac aac ggc gtc tac ccg ctg cgg gcc gcg ctg cac 624
Gly Ala Leu Leu Asp Asn Gly Val Tyr Pro Leu Arg Ala Ala Leu His
195 200 205

ttc ctc gga ccc gaa ctg cgc ctg acc ggc gcc gtg ctg cgc cgt gac 672
Phe Leu Gly Pro Glu Leu Arg Leu Thr Gly Ala Val Leu Arg Arg Asp
210 215 220

cgc cgc cgg ggc gtc gtg gtc tcc ggc agc gtc ctg ctc gcc gcc ccc 720
Arg Arg Arg Gly Val Val Val Ser Gly Ser Val Leu Leu Ala Ala Pro
225 230 235 240

cag ggc gtg gcc gcc cac ctc gcc ttc ggc atg gaa cac ggc tac cgc 768
Gln Gly Val Ala Ala His Leu Ala Phe Gly Met Glu His Gly Tyr Arg
245 250 255

tcg gcg tac gag ctg cac ggc agc acc ggc tcg ctc gcc ctg agc cac 816
Ser Ala Tyr Glu Leu His Gly Ser Thr Gly Ser Leu Ala Leu Ser His
260 265 270

gtc ttc acg acc ccg gac agc cac cac ccc gta ctg cgg ctg tcc cgc 864
Val Phe Thr Thr Pro Asp Ser His His Pro Val Leu Arg Leu Ser Arg
275 280 285

cag gac cac cgg gag gag cgc gtc ctg ccc gtg gac cgg cac ttc gtg 912
Gln Asp His Arg Glu Glu Arg Val Leu Pro Val Asp Arg His Phe Val
290 295 300

aac atc ctg tcg gtc ttc cgc cgt gcg gtg atc cgg gcc gag gac gtc 960
Asn Ile Leu Ser Val Phe Arg Arg Ala Val Ile Arg Ala Glu Asp Val
305 310 315 320

tcc gcc gag tcg tac gcc gcg ctg cgc cag gcg ggg ctg gtc gac gag 1008
Ser Ala Glu Ser Tyr Ala Ala Leu Arg Gln Ala Gly Leu Val Asp Glu
325 330 335

atc gtg gcc cgc gcc gag acc ttc acc gtg tag 1041
Ile Val Ala Arg Ala Glu Thr Phe Thr Val
340 345

<210> 65
<211> 346
<212> PRT
<213> Streptomyces ambofaciens

<400> 65

Met Thr Ala Leu Gly Thr Ser Ala Glu Pro Phe Ala Ala Pro Gly Pro
1 5 10 15

Pro Arg Pro Glu Ala Ser Pro Val Leu Arg Phe Gly Ala Ile Gly Cys
20 25 30

Gly Asp Ile Ala Gly Arg Arg Thr Leu Pro Ala Leu Leu Ser Thr Pro
35 40 45

```
Gly Thr Val Leu Thr Cys Val Gly Ser Arg Asp Ala Asp Arg Ala Lys
    50                  55                  60

Ala Leu Gly Arg His Phe Asp Cys Glu Ala Val Ala Pro Tyr Glu Ala
65                  70                  75                  80

Leu Leu Glu Arg Pro Asp Val Asp Ala Val Tyr Ile Ala Val Pro Ser
                85                  90                  95

Met Leu His Ala Glu Trp Ala Ala Ala Ala Leu Arg Ala Gly Lys His
            100                 105                 110

Val Leu Val Glu Lys Pro Ala Ala Ala Asn His Ala Asp Ala Ala Arg
        115                 120                 125

Leu Phe Ala Met Ala Arg Glu Arg Gly Leu Val Leu Met Glu Asn Phe
    130                 135                 140

Met Phe Leu His His Ser Gln His Ala Thr Val Lys Ala Leu Leu Glu
145                 150                 155                 160

Ala Gly Ala Ile Gly Glu Leu Arg Thr Phe Ser Ala Ala Phe Thr Ile
                165                 170                 175

Pro Pro Arg Ala Asp Asp Asp Met Arg Tyr Arg Pro Asp Ile Gly Gly
            180                 185                 190

Gly Ala Leu Leu Asp Asn Gly Val Tyr Pro Leu Arg Ala Ala Leu His
        195                 200                 205

Phe Leu Gly Pro Glu Leu Arg Leu Thr Gly Ala Val Leu Arg Arg Asp
    210                 215                 220

Arg Arg Arg Gly Val Val Val Ser Gly Ser Val Leu Leu Ala Ala Pro
225                 230                 235                 240

Gln Gly Val Ala Ala His Leu Ala Phe Gly Met Glu His Gly Tyr Arg
                245                 250                 255

Ser Ala Tyr Glu Leu His Gly Ser Thr Gly Ser Leu Ala Leu Ser His
            260                 265                 270

Val Phe Thr Thr Pro Asp Ser His His Pro Val Leu Arg Leu Ser Arg
        275                 280                 285
```

```
Gln Asp His Arg Glu Glu Arg Val Leu Pro Val Asp Arg His Phe Val
    290                 295                 300


Asn Ile Leu Ser Val Phe Arg Arg Ala Val Ile Arg Ala Glu Asp Val
305                 310                 315                 320


Ser Ala Glu Ser Tyr Ala Ala Leu Arg Gln Ala Gly Leu Val Asp Glu
                325                 330                 335


Ile Val Ala Arg Ala Glu Thr Phe Thr Val
            340                 345


<210>  66
<211>  1239
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1239)

<400>  66
gtg acg gac gcg atc acg acc gag ctg gcc gac cgc gaa ctg ggg cgc        48
Val Thr Asp Ala Ile Thr Thr Glu Leu Ala Asp Arg Glu Leu Gly Arg
1               5                   10                  15

aga ctg cac cgg ata cgc ggc gtc cac tgg tat ttc ggc aac cac ggt        96
Arg Leu His Arg Ile Arg Gly Val His Trp Tyr Phe Gly Asn His Gly
            20                  25                  30

gac ccg tac gcc ctc atc ctg cgc ggt cag acc gac gac ccg tcg gtg       144
Asp Pro Tyr Ala Leu Ile Leu Arg Gly Gln Thr Asp Asp Pro Ser Val
        35                  40                  45

tac gag gag cgg gtc cgc gag ggc ggg ccg ctg ttc cgc agc cgt acc       192
Tyr Glu Glu Arg Val Arg Glu Gly Gly Pro Leu Phe Arg Ser Arg Thr
    50                  55                  60

ggg acc tgg gtg acc gcg gac ccg gag gtg gcc gcg gcc gtg ctg ggc       240
Gly Thr Trp Val Thr Ala Asp Pro Glu Val Ala Ala Ala Val Leu Gly
65                  70                  75                  80

gac tcg cgc ttc ggt gcg ctg gac cgc gcc gga cgg cgc ccg gag gag       288
Asp Ser Arg Phe Gly Ala Leu Asp Arg Ala Gly Arg Arg Pro Glu Glu
                85                  90                  95

tac ctc cag ccg tcg ccc gcc acg tac ctg ggg ctg gac cgc gcc gcg       336
Tyr Leu Gln Pro Ser Pro Ala Thr Tyr Leu Gly Leu Asp Arg Ala Ala
            100                 105                 110

tac gcg cgt ctg cgg cgg gtg gcc gag ccc gtg ctg ggc gcg gac gcc       384
Tyr Ala Arg Leu Arg Arg Val Ala Glu Pro Val Leu Gly Ala Asp Ala
        115                 120                 125

gcc gcc gcg tgg cgc cgg ctc ggc gag gac gtc ggg cgc cgg ctg ctc       432
Ala Ala Ala Trp Arg Arg Leu Gly Glu Asp Val Gly Arg Arg Leu Leu
```

```
    130                 135                 140

gcc ggc cgc ggt tcc ggc ctc gac ctg acg gcg gac ttc gcc cgc cgg        480
Ala Gly Arg Gly Ser Gly Leu Asp Leu Thr Ala Asp Phe Ala Arg Arg
145                 150                 155                 160

ctg ccg gca ttg gtc ctg gcc gcg tgg ctc ggg gtg ccg ggc gaa cgg        528
Leu Pro Ala Leu Val Leu Ala Ala Trp Leu Gly Val Pro Gly Glu Arg
                165                 170                 175

tgc gac gag tgg gag gag tcg ctg cgg gcg gcg ggg ccg ctg ctg gac        576
Cys Asp Glu Trp Glu Glu Ser Leu Arg Ala Ala Gly Pro Leu Leu Asp
            180                 185                 190

ggt ctg ctg tgt ccg cag acg ctg gcg gcc acc cgt gcg gcg gac tcg        624
Gly Leu Leu Cys Pro Gln Thr Leu Ala Ala Thr Arg Ala Ala Asp Ser
        195                 200                 205

gcc gcc gag ggg ctg cgc gcg ctg ttg gac gag gtg gtc gcc gcg cgt        672
Ala Ala Glu Gly Leu Arg Ala Leu Leu Asp Glu Val Val Ala Ala Arg
    210                 215                 220

ccc ggc ggg tcc ggc gag ggt gcg gtg gcc cgc atg gtc ggc gcc gga        720
Pro Gly Gly Ser Gly Glu Gly Ala Val Ala Arg Met Val Gly Ala Gly
225                 230                 235                 240

gcc gcc ccc gac gac gcg gtg gcc gcc gcc gtg tgc ctg gcg ctc tcg        768
Ala Ala Pro Asp Asp Ala Val Ala Ala Ala Val Cys Leu Ala Leu Ser
                245                 250                 255

gcc gtc gaa ccg acg acg acc ctg gtg tgc gaa gcg gtc cgg ctg ctg        816
Ala Val Glu Pro Thr Thr Thr Leu Val Cys Glu Ala Val Arg Leu Leu
            260                 265                 270

ctc gac cga ccc gag tgg tgg cgg cgg ttg tgc gac tcc ccc gct ctg        864
Leu Asp Arg Pro Glu Trp Trp Arg Arg Leu Cys Asp Ser Pro Ala Leu
        275                 280                 285

gcg ccg gcc gcg gtc cgg cac acc ctg cgg cac gcg ccc ccg gtg cgg        912
Ala Pro Ala Ala Val Arg His Thr Leu Arg His Ala Pro Pro Val Arg
    290                 295                 300

ctg gag agc cgg gtg gcc cac gag gac gtg acg gtg gcg gat cgt ccg        960
Leu Glu Ser Arg Val Ala His Glu Asp Val Thr Val Ala Asp Arg Pro
305                 310                 315                 320

ctg ccc gcc ggg agc cac gtg gtg gtg ctc gtg ggc gcg gca cgg cgc       1008
Leu Pro Ala Gly Ser His Val Val Val Leu Val Gly Ala Ala Arg Arg
                325                 330                 335

gcg ggc gcc ccg gcc gcg gag ccg gcg gac ctg gcg ggc gca ccg gcg       1056
Ala Gly Ala Pro Ala Ala Glu Pro Ala Asp Leu Ala Gly Ala Pro Ala
            340                 345                 350

gcg gag ctg ccg gac gac ctg tgg ttc gcg ctg tcc ggg gag ttc gtc       1104
Ala Glu Leu Pro Asp Asp Leu Trp Phe Ala Leu Ser Gly Glu Phe Val
        355                 360                 365

ggc cgt gcc gcc gag acc gcg ctg ggc gtg ctg gcc gag gcc gcc ccg       1152
Gly Arg Ala Ala Glu Thr Ala Leu Gly Val Leu Ala Glu Ala Ala Pro
    370                 375                 380
```

```
gga ctg cgg cgg gac ggc gac atc gtc cgg cgg cgc cgt tcc ccg gtc      1200
Gly Leu Arg Arg Asp Gly Asp Ile Val Arg Arg Arg Arg Ser Pro Val
385                 390                 395                 400

ctc ggc agg tac gcg cgg ttc ccc gtc gcg tac tcc tga                  1239
Leu Gly Arg Tyr Ala Arg Phe Pro Val Ala Tyr Ser
                405                 410


<210>  67
<211>  412
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  67

Val Thr Asp Ala Ile Thr Thr Glu Leu Ala Asp Arg Glu Leu Gly Arg
1               5                   10                  15


Arg Leu His Arg Ile Arg Gly Val His Trp Tyr Phe Gly Asn His Gly
            20                  25                  30


Asp Pro Tyr Ala Leu Ile Leu Arg Gly Gln Thr Asp Asp Pro Ser Val
        35                  40                  45


Tyr Glu Glu Arg Val Arg Glu Gly Gly Pro Leu Phe Arg Ser Arg Thr
    50                  55                  60


Gly Thr Trp Val Thr Ala Asp Pro Glu Val Ala Ala Ala Val Leu Gly
65                  70                  75                  80


Asp Ser Arg Phe Gly Ala Leu Asp Arg Ala Gly Arg Arg Pro Glu Glu
                85                  90                  95


Tyr Leu Gln Pro Ser Pro Ala Thr Tyr Leu Gly Leu Asp Arg Ala Ala
            100                 105                 110


Tyr Ala Arg Leu Arg Arg Val Ala Glu Pro Val Leu Gly Ala Asp Ala
        115                 120                 125


Ala Ala Ala Trp Arg Arg Leu Gly Glu Asp Val Gly Arg Arg Leu Leu
    130                 135                 140


Ala Gly Arg Gly Ser Gly Leu Asp Leu Thr Ala Asp Phe Ala Arg Arg
145                 150                 155                 160


Leu Pro Ala Leu Val Leu Ala Ala Trp Leu Gly Val Pro Gly Glu Arg
                165                 170                 175
```

```
Cys Asp Glu Trp Glu Glu Ser Leu Arg Ala Ala Gly Pro Leu Leu Asp
            180                 185                 190

Gly Leu Leu Cys Pro Gln Thr Leu Ala Ala Thr Arg Ala Ala Asp Ser
        195                 200                 205

Ala Ala Glu Gly Leu Arg Ala Leu Leu Asp Glu Val Val Ala Ala Arg
    210                 215                 220

Pro Gly Gly Ser Gly Glu Gly Ala Val Ala Arg Met Val Gly Ala Gly
225                 230                 235                 240

Ala Ala Pro Asp Asp Ala Val Ala Ala Ala Val Cys Leu Ala Leu Ser
                245                 250                 255

Ala Val Glu Pro Thr Thr Thr Leu Val Cys Glu Ala Val Arg Leu Leu
            260                 265                 270

Leu Asp Arg Pro Glu Trp Trp Arg Arg Leu Cys Asp Ser Pro Ala Leu
        275                 280                 285

Ala Pro Ala Ala Val Arg His Thr Leu Arg His Ala Pro Pro Val Arg
    290                 295                 300

Leu Glu Ser Arg Val Ala His Glu Asp Val Thr Val Ala Asp Arg Pro
305                 310                 315                 320

Leu Pro Ala Gly Ser His Val Val Val Leu Val Gly Ala Ala Arg Arg
                325                 330                 335

Ala Gly Ala Pro Ala Ala Glu Pro Ala Asp Leu Ala Gly Ala Pro Ala
            340                 345                 350

Ala Glu Leu Pro Asp Asp Leu Trp Phe Ala Leu Ser Gly Glu Phe Val
        355                 360                 365

Gly Arg Ala Ala Glu Thr Ala Leu Gly Val Leu Ala Glu Ala Ala Pro
    370                 375                 380

Gly Leu Arg Arg Asp Gly Asp Ile Val Arg Arg Arg Arg Ser Pro Val
385                 390                 395                 400

Leu Gly Arg Tyr Ala Arg Phe Pro Val Ala Tyr Ser
                405                 410

<210>  68
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<211>  1272
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1272)

<400>  68
gtg cgc gtc ctg gtg acc tcc atc ccg cac cac acg cac tac tac cac         48
Val Arg Val Leu Val Thr Ser Ile Pro His His Thr His Tyr Tyr His
1               5                   10                  15

ctg gta ccg ctg atc tgg gct ctg cgt gcc tcg ggg cac gag gtg gtg         96
Leu Val Pro Leu Ile Trp Ala Leu Arg Ala Ser Gly His Glu Val Val
            20                  25                  30

gcg gcc ggc cag ccg tcg ctg gtc gac gcc atc acc gcc agc ggc atc        144
Ala Ala Gly Gln Pro Ser Leu Val Asp Ala Ile Thr Ala Ser Gly Ile
        35                  40                  45

ccg gcg ttc gcc ctg gcc gag gag gag tcg ctg gcg cag atc ttc gag        192
Pro Ala Phe Ala Leu Ala Glu Glu Glu Ser Leu Ala Gln Ile Phe Glu
    50                  55                  60

gag gtc gag ggc gat ctc cag ccg tat cag cac ggc atc gac gag ttc        240
Glu Val Glu Gly Asp Leu Gln Pro Tyr Gln His Gly Ile Asp Glu Phe
65                  70                  75                  80

gac ttc ttc ggc acc ctg aag gac gag ctg gac tgg gag aag ctg ctc        288
Asp Phe Phe Gly Thr Leu Lys Asp Glu Leu Asp Trp Glu Lys Leu Leu
                85                  90                  95

gcc cag cag gtg atc ctg tcc ggc ctg tgg ctg gaa ccg ctc aac ggc        336
Ala Gln Gln Val Ile Leu Ser Gly Leu Trp Leu Glu Pro Leu Asn Gly
            100                 105                 110

gcc acg acc ctc gac agc atc gtc gac ttc gcc cgg gcc tgg aag ccc        384
Ala Thr Thr Leu Asp Ser Ile Val Asp Phe Ala Arg Ala Trp Lys Pro
        115                 120                 125

gac ctg gtg ctg tgg gag ccg ttc acc tat gcg ggg ccg gtg gcg gcc        432
Asp Leu Val Leu Trp Glu Pro Phe Thr Tyr Ala Gly Pro Val Ala Ala
    130                 135                 140

cgg gcg tgc ggg gcc gcg cac gcc cgc gtc ctg tgg ggg ccg gac acg        480
Arg Ala Cys Gly Ala Ala His Ala Arg Val Leu Trp Gly Pro Asp Thr
145                 150                 155                 160

atc ggg ctg ctg cgg acg aag ttc ctt cag gcc cag gcg cgt cag ccc        528
Ile Gly Leu Leu Arg Thr Lys Phe Leu Gln Ala Gln Ala Arg Gln Pro
                165                 170                 175

gag gag cac cgg gac gac ccg gtc gcg gag tgg atg acc tgg gcc ctg        576
Glu Glu His Arg Asp Asp Pro Val Ala Glu Trp Met Thr Trp Ala Leu
            180                 185                 190

gcg cgc tac ggg tgc gac ttc cgg gag gag gac gtg ctc ggt cag tgg        624
Ala Arg Tyr Gly Cys Asp Phe Arg Glu Glu Asp Val Leu Gly Gln Trp
        195                 200                 205
```

```
agc gtg gac ccg atg gcg gag ggc gtc agt ctg ggc ctc gac ctg ccg        672
Ser Val Asp Pro Met Ala Glu Gly Val Ser Leu Gly Leu Asp Leu Pro
    210                 215                 220

acc gtc ccg atg cgc tac acc ccg tac aac ggg tcg gcg gtg atc ccc        720
Thr Val Pro Met Arg Tyr Thr Pro Tyr Asn Gly Ser Ala Val Ile Pro
225                 230                 235                 240

gac tgg ctg acc gag gaa ccg aaa cgg cct cgg gtc tgc ctg acc ctg        768
Asp Trp Leu Thr Glu Glu Pro Lys Arg Pro Arg Val Cys Leu Thr Leu
                245                 250                 255

ggg gtg tcc tcg cgg gag cac agt gag gac gag gtc ccg gtg cag agg        816
Gly Val Ser Ser Arg Glu His Ser Glu Asp Glu Val Pro Val Gln Arg
            260                 265                 270

ttt atc gag gcg ctg gcc gat ctc gac atc gag ctg gtg gcg acc ctg        864
Phe Ile Glu Ala Leu Ala Asp Leu Asp Ile Glu Leu Val Ala Thr Leu
        275                 280                 285

gac gac gcc cag cgg gac ctg ctg ccg agg atc ccg gac aac acg cgc        912
Asp Asp Ala Gln Arg Asp Leu Leu Pro Arg Ile Pro Asp Asn Thr Arg
    290                 295                 300

atc gtc gac ttc gtg ccc atg gac gcg ttg ctg ccg acg tgc tcg gcg        960
Ile Val Asp Phe Val Pro Met Asp Ala Leu Leu Pro Thr Cys Ser Ala
305                 310                 315                 320

atc atc aac cac agc ggt tcg ggc acg tgc aac acc gcc gcg ctg cac       1008
Ile Ile Asn His Ser Gly Ser Gly Thr Cys Asn Thr Ala Ala Leu His
                325                 330                 335

ggg gtg ccg cag atc atc ctc ggc ggc atc ctg gac gcc gcc gta cgg       1056
Gly Val Pro Gln Ile Ile Leu Gly Gly Ile Leu Asp Ala Ala Val Arg
            340                 345                 350

cag cac atg ttc gcg cag aac tcc gcc gcc ctc acc ttc gct ccg gag       1104
Gln His Met Phe Ala Gln Asn Ser Ala Ala Leu Thr Phe Ala Pro Glu
        355                 360                 365

gag gtg acc ggc gcg tcg ctg agg agc gcg ctg gtg cgc ctg ctc gag       1152
Glu Val Thr Gly Ala Ser Leu Arg Ser Ala Leu Val Arg Leu Leu Glu
    370                 375                 380

gag ccg cgg ttc cgc gac ggc gcg cgg cgg ctg aag gag cgg atg cgg       1200
Glu Pro Arg Phe Arg Asp Gly Ala Arg Arg Leu Lys Glu Arg Met Arg
385                 390                 395                 400

gcc atg ccc agc ccg gcc ggg atc gtg ccg acc ctg gag cgc ctc acg       1248
Ala Met Pro Ser Pro Ala Gly Ile Val Pro Thr Leu Glu Arg Leu Thr
                405                 410                 415

gcc cag cac cgc cgg gcg tgt tga                                       1272
Ala Gln His Arg Arg Ala Cys
            420


<210>  69
<211>  423
<212>  PRT
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<213>  Streptomyces ambofaciens

<400>  69

Val Arg Val Leu Val Thr Ser Ile Pro His His Thr His Tyr Tyr His
1               5                   10                  15


Leu Val Pro Leu Ile Trp Ala Leu Arg Ala Ser Gly His Glu Val Val
            20                  25                  30


Ala Ala Gly Gln Pro Ser Leu Val Asp Ala Ile Thr Ala Ser Gly Ile
        35                  40                  45


Pro Ala Phe Ala Leu Ala Glu Glu Glu Ser Leu Ala Gln Ile Phe Glu
    50                  55                  60


Glu Val Glu Gly Asp Leu Gln Pro Tyr Gln His Gly Ile Asp Glu Phe
65                  70                  75                  80


Asp Phe Phe Gly Thr Leu Lys Asp Glu Leu Asp Trp Glu Lys Leu Leu
                85                  90                  95


Ala Gln Gln Val Ile Leu Ser Gly Leu Trp Leu Glu Pro Leu Asn Gly
            100                 105                 110


Ala Thr Thr Leu Asp Ser Ile Val Asp Phe Ala Arg Ala Trp Lys Pro
        115                 120                 125


Asp Leu Val Leu Trp Glu Pro Phe Thr Tyr Ala Gly Pro Val Ala Ala
    130                 135                 140


Arg Ala Cys Gly Ala Ala His Ala Arg Val Leu Trp Gly Pro Asp Thr
145                 150                 155                 160


Ile Gly Leu Leu Arg Thr Lys Phe Leu Gln Ala Gln Ala Arg Gln Pro
                165                 170                 175


Glu Glu His Arg Asp Asp Pro Val Ala Glu Trp Met Thr Trp Ala Leu
            180                 185                 190


Ala Arg Tyr Gly Cys Asp Phe Arg Glu Glu Asp Val Leu Gly Gln Trp
        195                 200                 205


Ser Val Asp Pro Met Ala Glu Gly Val Ser Leu Gly Leu Asp Leu Pro
    210                 215                 220


Thr Val Pro Met Arg Tyr Thr Pro Tyr Asn Gly Ser Ala Val Ile Pro
```

```
225                 230                 235                 240

Asp Trp Leu Thr Glu Glu Pro Lys Arg Pro Arg Val Cys Leu Thr Leu
                245                 250                 255

Gly Val Ser Ser Arg Glu His Ser Glu Asp Glu Val Pro Val Gln Arg
            260                 265                 270

Phe Ile Glu Ala Leu Ala Asp Leu Asp Ile Glu Leu Val Ala Thr Leu
        275                 280                 285

Asp Asp Ala Gln Arg Asp Leu Leu Pro Arg Ile Pro Asp Asn Thr Arg
    290                 295                 300

Ile Val Asp Phe Val Pro Met Asp Ala Leu Leu Pro Thr Cys Ser Ala
305                 310                 315                 320

Ile Ile Asn His Ser Gly Ser Gly Thr Cys Asn Thr Ala Ala Leu His
                325                 330                 335

Gly Val Pro Gln Ile Ile Leu Gly Gly Ile Leu Asp Ala Ala Val Arg
            340                 345                 350

Gln His Met Phe Ala Gln Asn Ser Ala Ala Leu Thr Phe Ala Pro Glu
        355                 360                 365

Glu Val Thr Gly Ala Ser Leu Arg Ser Ala Leu Val Arg Leu Leu Glu
    370                 375                 380

Glu Pro Arg Phe Arg Asp Gly Ala Arg Arg Leu Lys Glu Arg Met Arg
385                 390                 395                 400

Ala Met Pro Ser Pro Ala Gly Ile Val Pro Thr Leu Glu Arg Leu Thr
                405                 410                 415

Ala Gln His Arg Arg Ala Cys
            420


<210>  70
<211>  1179
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1179)
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<400>  70
atg cgg gcc ctc ttc acg acc gcg ccg ctc gcg ggc cac ctg ctt ccg        48
Met Arg Ala Leu Phe Thr Thr Ala Pro Leu Ala Gly His Leu Leu Pro
1               5                   10                  15

ctg gtg ccc atc gcg tgg gcc ctg cgg gcg gcc ggc cac gag gta ctg        96
Leu Val Pro Ile Ala Trp Ala Leu Arg Ala Ala Gly His Glu Val Leu
            20                  25                  30

gtg gcg acc cgg gag gac ttc gtg ccg gtc gcc ctg cgg tcg ggg ctg       144
Val Ala Thr Arg Glu Asp Phe Val Pro Val Ala Leu Arg Ser Gly Leu
        35                  40                  45

ccg tcc gcc tcg tgc ggg ccg ccc gcc gcg gac ctg gcg ggc gcg gcc       192
Pro Ser Ala Ser Cys Gly Pro Pro Ala Ala Asp Leu Ala Gly Ala Ala
    50                  55                  60

gag gcg ggg gcg ctc gcg cgg ccc cgc gga gcg gcg gag gct cgg ggg       240
Glu Ala Gly Ala Leu Ala Arg Pro Arg Gly Ala Ala Glu Ala Arg Gly
65                  70                  75                  80

gtc ctg agc ggg gcg ctg gcg cgc gtc gcc cgg ggc agt ctg gcg ggg       288
Val Leu Ser Gly Ala Leu Ala Arg Val Ala Arg Gly Ser Leu Ala Gly
                85                  90                  95

gtg cgg cgg ctg gcg gac gcc tgg cgg ccg gat ctg atc gtc agc gaa       336
Val Arg Arg Leu Ala Asp Ala Trp Arg Pro Asp Leu Ile Val Ser Glu
            100                 105                 110

cgg gcc gag ttc gcc ggg ccg ctg gtc gcg gcg gcc ctc ggg gtc ccg       384
Arg Ala Glu Phe Ala Gly Pro Leu Val Ala Ala Ala Leu Gly Val Pro
        115                 120                 125

tgg gtc cgc tac cac tgg tcg gtc tcg tcc ctg gag gag tac cgg cga       432
Trp Val Arg Tyr His Trp Ser Val Ser Ser Leu Glu Glu Tyr Arg Arg
    130                 135                 140

gcg gcc gag gcc gag ttc gcg ccc gag ctg gcg gcg ctc ggc ctc gac       480
Ala Ala Glu Ala Glu Phe Ala Pro Glu Leu Ala Ala Leu Gly Leu Asp
145                 150                 155                 160

cgg ttc ccg gag gcg gcg cgc gtg ctc gat ccg tgg ccg gtg tcg ctg       528
Arg Phe Pro Glu Ala Ala Arg Val Leu Asp Pro Trp Pro Val Ser Leu
                165                 170                 175

cgc cgg ccg gac gcg gtc gcc cac gac ggg gtc cgg cac gta ccg gcc       576
Arg Arg Pro Asp Ala Val Ala His Asp Gly Val Arg His Val Pro Ala
            180                 185                 190

cac ggg gac gcc ccc gtc ccc gac tgg gcg ttc acg cgc ggt cgc ggg       624
His Gly Asp Ala Pro Val Pro Asp Trp Ala Phe Thr Arg Gly Arg Gly
        195                 200                 205

ccg cgg atc tgc gtg acg ctc ggc acc atg ctg ccc cgg tac ggc gcc       672
Pro Arg Ile Cys Val Thr Leu Gly Thr Met Leu Pro Arg Tyr Gly Ala
    210                 215                 220

gcc ggg atg gcc gac ttc ctg acg gag ctg gtg gcg gag acc cgc gga       720
Ala Gly Met Ala Asp Phe Leu Thr Glu Leu Val Ala Glu Thr Arg Gly
225                 230                 235                 240
```

ggg gac tgc gaa ctg ctc gtg gcg gtc gac gac gac gtc gtc gcg cgg 768
Gly Asp Cys Glu Leu Leu Val Ala Val Asp Asp Asp Val Val Ala Arg
245 250 255

tgg ccg tcg ctg ccc tcc gcg gtg cgg tac gcc ggc cgg ctg ccg ctg 816
Trp Pro Ser Leu Pro Ser Ala Val Arg Tyr Ala Gly Arg Leu Pro Leu
260 265 270

gcg gag gtg ctg ccc gcg tgc gac gcg gtg gtg cac cac ggc ggg cag 864
Ala Glu Val Leu Pro Ala Cys Asp Ala Val Val His His Gly Gly Gln
275 280 285

ggc acg tcc ctg acc gcg ctg gcc gcg ggt cgg ccg cag gtc gtc atg 912
Gly Thr Ser Leu Thr Ala Leu Ala Ala Gly Arg Pro Gln Val Val Met
290 295 300

gcg cgg ctc gac gac cag ttc gac aac gcg cgg gca ctg gcg gcg gcg 960
Ala Arg Leu Asp Asp Gln Phe Asp Asn Ala Arg Ala Leu Ala Ala Ala
305 310 315 320

ggg gcg gcc ctg ctc gta ccg ccg tcc cgg gcc act ccc gcg gcc gtg 1008
Gly Ala Ala Leu Leu Val Pro Pro Ser Arg Ala Thr Pro Ala Ala Val
325 330 335

gcc gcg ggg tgc gcc gaa gtg ctg gag aac gcc ctg tat gcc aag gcg 1056
Ala Ala Gly Cys Ala Glu Val Leu Glu Asn Ala Leu Tyr Ala Lys Ala
340 345 350

gca gcc ggg ctc gcc gag gag atg gcg ctg ctg ccg tcg ccg tcg gcg 1104
Ala Ala Gly Leu Ala Glu Glu Met Ala Leu Leu Pro Ser Pro Ser Ala
355 360 365

gcg gtc gga ctc ctg gaa cac ccg ggg ccc ggg ccg gac atg ccg cgg 1152
Ala Val Gly Leu Leu Glu His Pro Gly Pro Gly Pro Asp Met Pro Arg
370 375 380

agt tac ccg aac gag gat gcg gtg tga 1179
Ser Tyr Pro Asn Glu Asp Ala Val
385 390

<210> 71
<211> 392
<212> PRT
<213> Streptomyces ambofaciens

<400> 71

Met Arg Ala Leu Phe Thr Thr Ala Pro Leu Ala Gly His Leu Leu Pro
1 5 10 15

Leu Val Pro Ile Ala Trp Ala Leu Arg Ala Ala Gly His Glu Val Leu
20 25 30

Val Ala Thr Arg Glu Asp Phe Val Pro Val Ala Leu Arg Ser Gly Leu
35 40 45

Pro Ser Ala Ser Cys Gly Pro Pro Ala Ala Asp Leu Ala Gly Ala Ala

```
    50                  55                  60

Glu Ala Gly Ala Leu Ala Arg Pro Arg Gly Ala Ala Glu Ala Arg Gly
65                  70                  75                  80

Val Leu Ser Gly Ala Leu Ala Arg Val Ala Arg Gly Ser Leu Ala Gly
                85                  90                  95

Val Arg Arg Leu Ala Asp Ala Trp Arg Pro Asp Leu Ile Val Ser Glu
            100                 105                 110

Arg Ala Glu Phe Ala Gly Pro Leu Val Ala Ala Ala Leu Gly Val Pro
        115                 120                 125

Trp Val Arg Tyr His Trp Ser Val Ser Ser Leu Glu Glu Tyr Arg Arg
    130                 135                 140

Ala Ala Glu Ala Glu Phe Ala Pro Glu Leu Ala Ala Leu Gly Leu Asp
145                 150                 155                 160

Arg Phe Pro Glu Ala Ala Arg Val Leu Asp Pro Trp Pro Val Ser Leu
                165                 170                 175

Arg Arg Pro Asp Ala Val Ala His Asp Gly Val Arg His Val Pro Ala
            180                 185                 190

His Gly Asp Ala Pro Val Pro Asp Trp Ala Phe Thr Arg Gly Arg Gly
        195                 200                 205

Pro Arg Ile Cys Val Thr Leu Gly Thr Met Leu Pro Arg Tyr Gly Ala
    210                 215                 220

Ala Gly Met Ala Asp Phe Leu Thr Glu Leu Val Ala Glu Thr Arg Gly
225                 230                 235                 240

Gly Asp Cys Glu Leu Leu Val Ala Val Asp Asp Asp Val Val Ala Arg
                245                 250                 255

Trp Pro Ser Leu Pro Ser Ala Val Arg Tyr Ala Gly Arg Leu Pro Leu
            260                 265                 270

Ala Glu Val Leu Pro Ala Cys Asp Ala Val Val His His Gly Gly Gln
        275                 280                 285

Gly Thr Ser Leu Thr Ala Leu Ala Ala Gly Arg Pro Gln Val Val Met
    290                 295                 300
```

Ala Arg Leu Asp Asp Gln Phe Asp Asn Ala Arg Ala Leu Ala Ala Ala
305 310 315 320

Gly Ala Ala Leu Leu Val Pro Pro Ser Arg Ala Thr Pro Ala Ala Val
325 330 335

Ala Ala Gly Cys Ala Glu Val Leu Glu Asn Ala Leu Tyr Ala Lys Ala
340 345 350

Ala Ala Gly Leu Ala Glu Glu Met Ala Leu Leu Pro Ser Pro Ser Ala
355 360 365

Ala Val Gly Leu Leu Glu His Pro Gly Pro Gly Pro Asp Met Pro Arg
370 375 380

Ser Tyr Pro Asn Glu Asp Ala Val
385 390

<210> 72
<211> 993
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(993)

<400> 72
gtg aat ctg gaa gta ctc aac cgt tcg aac gat ccg cgc ggg ccg gtg 48
Val Asn Leu Glu Val Leu Asn Arg Ser Asn Asp Pro Arg Gly Pro Val
1 5 10 15

atc acg gtg gtc ggc gcg tcc ggc ttc atc ggg tcc gcc ctg gtc gcc 96
Ile Thr Val Val Gly Ala Ser Gly Phe Ile Gly Ser Ala Leu Val Ala
20 25 30

gag ctg gcg cgc atg ccg gtg cgg ctg cgg gcg gtg gcc cgg cgc gag 144
Glu Leu Ala Arg Met Pro Val Arg Leu Arg Ala Val Ala Arg Arg Glu
35 40 45

acc ccc gtt ccc gcg ggg gca cgg gcc gcc gtc gag gtc cgc cgg gcg 192
Thr Pro Val Pro Ala Gly Ala Arg Ala Ala Val Glu Val Arg Arg Ala
50 55 60

gac ctc gcc cgg ccg gac gag gtc ggg gcc gcc gtc gag ggg gcg gac 240
Asp Leu Ala Arg Pro Asp Glu Val Gly Ala Ala Val Glu Gly Ala Asp
65 70 75 80

gcc gtc gtg cac ctc gcc gcc cac atc ggc ggc gcg cgg tcg tgg cgc 288
Ala Val Val His Leu Ala Ala His Ile Gly Gly Ala Arg Ser Trp Arg
85 90 95

```
gcg gcc gac gag cgg tcg ctg cgg gtg aac gtc ggt ctg ctg cgc gac       336
Ala Ala Asp Glu Arg Ser Leu Arg Val Asn Val Gly Leu Leu Arg Asp
            100                 105                 110

gtg gcc gac gcg ttc cgg gac cgc tcg ggg ccc gcc ccg gcc gtg gtc       384
Val Ala Asp Ala Phe Arg Asp Arg Ser Gly Pro Ala Pro Ala Val Val
        115                 120                 125

ctg gcc agt acc ctc cag gcc ggc gtc gag ctg tcc cgg cag ggc ccg       432
Leu Ala Ser Thr Leu Gln Ala Gly Val Glu Leu Ser Arg Gln Gly Pro
    130                 135                 140

tac gcc cgg cag aag tcg gcg gcc gag gag gtc ctg ctg cgg gcc gcc       480
Tyr Ala Arg Gln Lys Ser Ala Ala Glu Glu Val Leu Leu Arg Ala Ala
145                 150                 155                 160

tcc gag gag gtg gtc cgc ggc gtc gtg ctg cgg ctg ccg acc gtc tac       528
Ser Glu Glu Val Val Arg Gly Val Val Leu Arg Leu Pro Thr Val Tyr
                165                 170                 175

ggg cgc agc ccg ctg acc ggg tgg acg ggc cgc ggg gtg gtc gcg tcg       576
Gly Arg Ser Pro Leu Thr Gly Trp Thr Gly Arg Gly Val Val Ala Ser
            180                 185                 190

gtg gca cgg cag gcc gtc tcg ggc gag ccg gtc acg atg tgg cac gac       624
Val Ala Arg Gln Ala Val Ser Gly Glu Pro Val Thr Met Trp His Asp
        195                 200                 205

ggc acg gtc ggg cgc gat ctg ctc cac gtg gag gac gcg gcc cgc gcc       672
Gly Thr Val Gly Arg Asp Leu Leu His Val Glu Asp Ala Ala Arg Ala
    210                 215                 220

ttc gcg gcg gcg ctc ggt cac gtg gag cgg ctg gac ggc ggc acg tgg       720
Phe Ala Ala Ala Leu Gly His Val Glu Arg Leu Asp Gly Gly Thr Trp
225                 230                 235                 240

tcc gtc ggt acg ggc cgg ctg gag ccc ttg gga gag gtg ttc tcg gcc       768
Ser Val Gly Thr Gly Arg Leu Glu Pro Leu Gly Glu Val Phe Ser Ala
                245                 250                 255

ctc gcc ggg ctg gtg gcc gag cgg acg ggg agg ccc ccc gta ccg gtg       816
Leu Ala Gly Leu Val Ala Glu Arg Thr Gly Arg Pro Pro Val Pro Val
            260                 265                 270

gtc tcc acg gag ccg ccc gac cat gcc gag gcg ggc gac ttc gag agc       864
Val Ser Thr Glu Pro Pro Asp His Ala Glu Ala Gly Asp Phe Glu Ser
        275                 280                 285

gcg gtc tgt gac ccc tcc gcg ttc cgc gcg gtg acc ggg tgg tct ccc       912
Ala Val Cys Asp Pro Ser Ala Phe Arg Ala Val Thr Gly Trp Ser Pro
    290                 295                 300

ctc gtt ccg ttg cgg gcg ggg ctc ggc gcc gtg gtg gag acg atg gtg       960
Leu Val Pro Leu Arg Ala Gly Leu Gly Ala Val Val Glu Thr Met Val
305                 310                 315                 320

gcc gac gga gcg agg ggt ggg atc cga acg tga                           993
Ala Asp Gly Ala Arg Gly Gly Ile Arg Thr
                325                 330
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<210>  73
<211>  330
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  73

Val Asn Leu Glu Val Leu Asn Arg Ser Asn Asp Pro Arg Gly Pro Val
1               5                   10                  15


Ile Thr Val Val Gly Ala Ser Gly Phe Ile Gly Ser Ala Leu Val Ala
            20                  25                  30


Glu Leu Ala Arg Met Pro Val Arg Leu Arg Ala Val Ala Arg Arg Glu
        35                  40                  45


Thr Pro Val Pro Ala Gly Ala Arg Ala Ala Val Glu Val Arg Arg Ala
    50                  55                  60


Asp Leu Ala Arg Pro Asp Glu Val Gly Ala Ala Val Glu Gly Ala Asp
65                  70                  75                  80


Ala Val Val His Leu Ala Ala His Ile Gly Gly Ala Arg Ser Trp Arg
                85                  90                  95


Ala Ala Asp Glu Arg Ser Leu Arg Val Asn Val Gly Leu Leu Arg Asp
            100                 105                 110


Val Ala Asp Ala Phe Arg Asp Arg Ser Gly Pro Ala Pro Ala Val Val
        115                 120                 125


Leu Ala Ser Thr Leu Gln Ala Gly Val Glu Leu Ser Arg Gln Gly Pro
    130                 135                 140


Tyr Ala Arg Gln Lys Ser Ala Ala Glu Glu Val Leu Leu Arg Ala Ala
145                 150                 155                 160


Ser Glu Glu Val Val Arg Gly Val Val Leu Arg Leu Pro Thr Val Tyr
                165                 170                 175


Gly Arg Ser Pro Leu Thr Gly Trp Thr Gly Arg Gly Val Val Ala Ser
            180                 185                 190


Val Ala Arg Gln Ala Val Ser Gly Glu Pro Val Thr Met Trp His Asp
        195                 200                 205


Gly Thr Val Gly Arg Asp Leu Leu His Val Glu Asp Ala Ala Arg Ala
    210                 215                 220
```

```
Phe Ala Ala Ala Leu Gly His Val Glu Arg Leu Asp Gly Gly Thr Trp
225                 230                 235                 240


Ser Val Gly Thr Gly Arg Leu Glu Pro Leu Gly Glu Val Phe Ser Ala
                245                 250                 255


Leu Ala Gly Leu Val Ala Glu Arg Thr Gly Arg Pro Pro Val Pro Val
            260                 265                 270


Val Ser Thr Glu Pro Pro Asp His Ala Glu Ala Gly Asp Phe Glu Ser
        275                 280                 285


Ala Val Cys Asp Pro Ser Ala Phe Arg Ala Val Thr Gly Trp Ser Pro
    290                 295                 300


Leu Val Pro Leu Arg Ala Gly Leu Gly Ala Val Val Glu Thr Met Val
305                 310                 315                 320


Ala Asp Gly Ala Arg Gly Gly Ile Arg Thr
                325                 330


<210>  74
<211>  1008
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1008)

<400>  74
gtg agc acg gac cgg gag cag gcc gcg cac acg cgg ctc ggt cgc agc          48
Val Ser Thr Asp Arg Glu Gln Ala Ala His Thr Arg Leu Gly Arg Ser
1               5                   10                  15

gcg acc ctg gtg agc cgg ctc tgg ctg ggc acc gtg aac ttc agc ggc          96
Ala Thr Leu Val Ser Arg Leu Trp Leu Gly Thr Val Asn Phe Ser Gly
            20                  25                  30

cgg gtc gag gac ggt gac gcg atg cag ctg atg gag gcg gcg gtc gac         144
Arg Val Glu Asp Gly Asp Ala Met Gln Leu Met Glu Ala Ala Val Asp
        35                  40                  45

cgc ggc atc aac tgc atc gac acc gcg gac atc tac ggc tgg cgg atc         192
Arg Gly Ile Asn Cys Ile Asp Thr Ala Asp Ile Tyr Gly Trp Arg Ile
    50                  55                  60

cac aag ggc cac acc gag gaa ctg gtg ggc cgg tgg ctg gcc aag agc         240
His Lys Gly His Thr Glu Glu Leu Val Gly Arg Trp Leu Ala Lys Ser
65                  70                  75                  80
```

```
gcc gcg cgg cgg gag gac gtc ctg ctg gcc acc aag gtc ggc ggg gac        288
Ala Ala Arg Arg Glu Asp Val Leu Leu Ala Thr Lys Val Gly Gly Asp
                85                  90                  95

atg agc gaa cgg ctc aac gac ggc ggc ctg tcg gcg cgg cac atc gtc        336
Met Ser Glu Arg Leu Asn Asp Gly Gly Leu Ser Ala Arg His Ile Val
            100                 105                 110

acg gcc tgc gag cag tcg ctg cgg cgc ctg ggc gtg gac cac atc gac        384
Thr Ala Cys Glu Gln Ser Leu Arg Arg Leu Gly Val Asp His Ile Asp
        115                 120                 125

ctg tac cag atg cac cgc gtc gac cac gcc gcg ccg tgg gac gag atc        432
Leu Tyr Gln Met His Arg Val Asp His Ala Ala Pro Trp Asp Glu Ile
    130                 135                 140

tgg cag gcg atg gac cgt ctg gtg gcg agc ggc aag gtg acc tac gtg        480
Trp Gln Ala Met Asp Arg Leu Val Ala Ser Gly Lys Val Thr Tyr Val
145                 150                 155                 160

ggg tcg tcg aac ttc gcc ggc tgg aac gtc gcc gcc gcg cag gac gcg        528
Gly Ser Ser Asn Phe Ala Gly Trp Asn Val Ala Ala Ala Gln Asp Ala
                165                 170                 175

gcc cgg cgg cgc cag tcc ctc ggt ctg gtg tcc gag cag tgc ctg tac        576
Ala Arg Arg Arg Gln Ser Leu Gly Leu Val Ser Glu Gln Cys Leu Tyr
            180                 185                 190

aac ctg gcg gtg cgc cac gcc gag ctg gaa ctg ctg ccg gcc gcc cag        624
Asn Leu Ala Val Arg His Ala Glu Leu Glu Leu Leu Pro Ala Ala Gln
        195                 200                 205

gcg tac gga ctg ggc gtg ttc gcc tgg tcg ccg ctg cac ggc ggg ctg        672
Ala Tyr Gly Leu Gly Val Phe Ala Trp Ser Pro Leu His Gly Gly Leu
    210                 215                 220

ctc agc ggg gtg ctg cgc aag ctc gcg gcg ggc gtc gcg gtg aag tcg        720
Leu Ser Gly Val Leu Arg Lys Leu Ala Ala Gly Val Ala Val Lys Ser
225                 230                 235                 240

gca cag ggg cgg gcc cag ctg ctg ctg ccc gag ctg cgc gcg acg atc        768
Ala Gln Gly Arg Ala Gln Leu Leu Leu Pro Glu Leu Arg Ala Thr Ile
                245                 250                 255

gag gcg tac gag ggg ttc tgc ggc cgg atc ggc gcg gat ccg gcc gag        816
Glu Ala Tyr Glu Gly Phe Cys Gly Arg Ile Gly Ala Asp Pro Ala Glu
            260                 265                 270

gtc ggt ctg gcc tgg gtg ctg tcc cgg ccg ggg atc agc ggc gcg gtg        864
Val Gly Leu Ala Trp Val Leu Ser Arg Pro Gly Ile Ser Gly Ala Val
        275                 280                 285

atc ggt ccg cgc acg gtg gac cag ctg gac tcg gcg ctg cgg tcc ctg        912
Ile Gly Pro Arg Thr Val Asp Gln Leu Asp Ser Ala Leu Arg Ser Leu
    290                 295                 300

gac ctg gtc ctc ggg gag gcc gaa ctg gcc gag ctg gac gcc atc ttc        960
Asp Leu Val Leu Gly Glu Ala Glu Leu Ala Glu Leu Asp Ala Ile Phe
305                 310                 315                 320

ccg ccc ctg ggc aag ggc ggc cgg gcg ccg gac gcg tgg atc agc tga       1008
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Pro Pro Leu Gly Lys Gly Gly Arg Ala Pro Asp Ala Trp Ile Ser
325 330 335

<210> 75
<211> 335
<212> PRT
<213> Streptomyces ambofaciens

<400> 75

Val Ser Thr Asp Arg Glu Gln Ala Ala His Thr Arg Leu Gly Arg Ser
1 5 10 15

Ala Thr Leu Val Ser Arg Leu Trp Leu Gly Thr Val Asn Phe Ser Gly
20 25 30

Arg Val Glu Asp Gly Asp Ala Met Gln Leu Met Glu Ala Ala Val Asp
35 40 45

Arg Gly Ile Asn Cys Ile Asp Thr Ala Asp Ile Tyr Gly Trp Arg Ile
50 55 60

His Lys Gly His Thr Glu Glu Leu Val Gly Arg Trp Leu Ala Lys Ser
65 70 75 80

Ala Ala Arg Arg Glu Asp Val Leu Leu Ala Thr Lys Val Gly Gly Asp
85 90 95

Met Ser Glu Arg Leu Asn Asp Gly Gly Leu Ser Ala Arg His Ile Val
100 105 110

Thr Ala Cys Glu Gln Ser Leu Arg Arg Leu Gly Val Asp His Ile Asp
115 120 125

Leu Tyr Gln Met His Arg Val Asp His Ala Ala Pro Trp Asp Glu Ile
130 135 140

Trp Gln Ala Met Asp Arg Leu Val Ala Ser Gly Lys Val Thr Tyr Val
145 150 155 160

Gly Ser Ser Asn Phe Ala Gly Trp Asn Val Ala Ala Ala Gln Asp Ala
165 170 175

Ala Arg Arg Arg Gln Ser Leu Gly Leu Val Ser Glu Gln Cys Leu Tyr
180 185 190

Asn Leu Ala Val Arg His Ala Glu Leu Glu Leu Leu Pro Ala Ala Gln
195 200 205

```
Ala Tyr Gly Leu Gly Val Phe Ala Trp Ser Pro Leu His Gly Gly Leu
    210                 215                 220

Leu Ser Gly Val Leu Arg Lys Leu Ala Ala Gly Val Ala Val Lys Ser
225                 230                 235                 240

Ala Gln Gly Arg Ala Gln Leu Leu Leu Pro Glu Leu Arg Ala Thr Ile
                245                 250                 255

Glu Ala Tyr Glu Gly Phe Cys Gly Arg Ile Gly Ala Asp Pro Ala Glu
            260                 265                 270

Val Gly Leu Ala Trp Val Leu Ser Arg Pro Gly Ile Ser Gly Ala Val
        275                 280                 285

Ile Gly Pro Arg Thr Val Asp Gln Leu Asp Ser Ala Leu Arg Ser Leu
    290                 295                 300

Asp Leu Val Leu Gly Glu Ala Glu Leu Ala Glu Leu Asp Ala Ile Phe
305                 310                 315                 320

Pro Pro Leu Gly Lys Gly Gly Arg Ala Pro Asp Ala Trp Ile Ser
                325                 330                 335


<210>  76
<211>  1233
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1233)

<400>  76
atg att gcc acc gcg tgc cgc gtc tgc ggc aac aag gag ctg ctc tcc       48
Met Ile Ala Thr Ala Cys Arg Val Cys Gly Asn Lys Glu Leu Leu Ser
1               5                   10                  15

gta ctc gac ctg ggc gaa cag gcg ctc acc ggg gtg ttc ccg gcc gac       96
Val Leu Asp Leu Gly Glu Gln Ala Leu Thr Gly Val Phe Pro Ala Asp
            20                  25                  30

cgc gac gag gtc gtg ccg tcg gtc ccg ctg gaa ctc gtc gcg tgt tcc      144
Arg Asp Glu Val Val Pro Ser Val Pro Leu Glu Leu Val Ala Cys Ser
        35                  40                  45

ccg gcc gga tgc ggc ctc gtg caa ctg cgc cac acc ccc gac ccg gac      192
Pro Ala Gly Cys Gly Leu Val Gln Leu Arg His Thr Pro Asp Pro Asp
    50                  55                  60
```

```
ctc atg tac ggc gag ggc tac ggc tac cgc tcg ggc atc cgg ccc ttc        240
Leu Met Tyr Gly Glu Gly Tyr Gly Tyr Arg Ser Gly Ile Arg Pro Phe
65                  70                  75                  80

atg gtc gac cac ctg cat ggc aag gtc gcc gcc gtc cgc cgg ctg gtg        288
Met Val Asp His Leu His Gly Lys Val Ala Ala Val Arg Arg Leu Val
            85                  90                  95

gac ctc ggc ccg gac gac ctg gtc ctc gac atc ggc agc aac gac gcc        336
Asp Leu Gly Pro Asp Asp Leu Val Leu Asp Ile Gly Ser Asn Asp Ala
            100                 105                 110

acg ctc ctc aag ggc tac ccc gcc gac ggc ccg cga ctg gtc ggc atc        384
Thr Leu Leu Lys Gly Tyr Pro Ala Asp Gly Pro Arg Leu Val Gly Ile
        115                 120                 125

gac ccg acc ggc ggc aag ttc cgc gac ctg tac ccg ccg aac gcc gag        432
Asp Pro Thr Gly Gly Lys Phe Arg Asp Leu Tyr Pro Pro Asn Ala Glu
    130                 135                 140

ttg gtc gtg gac tac ttc acc cgc gcg acc ttc gag aac cgc ttc ggg        480
Leu Val Val Asp Tyr Phe Thr Arg Ala Thr Phe Glu Asn Arg Phe Gly
145                 150                 155                 160

gcg cgg cgg gcg aag gcc gtc acc tcc atc gcg atg ttc tac gac ctg        528
Ala Arg Arg Ala Lys Ala Val Thr Ser Ile Ala Met Phe Tyr Asp Leu
            165                 170                 175

ccg gac ccg ctg cgc ttc atg agc gac gtc cgc gac gtc ctc gcc gag        576
Pro Asp Pro Leu Arg Phe Met Ser Asp Val Arg Asp Val Leu Ala Glu
            180                 185                 190

gac ggc gtc tgg atg atg gag cag agc tac ctg ccc gcc atg ctc gaa        624
Asp Gly Val Trp Met Met Glu Gln Ser Tyr Leu Pro Ala Met Leu Glu
        195                 200                 205

gcc gac gcg tac gac atc gtc tgc cac gag cac ctg gag tac tac gcg        672
Ala Asp Ala Tyr Asp Ile Val Cys His Glu His Leu Glu Tyr Tyr Ala
    210                 215                 220

ctg cgc cag atc gag tgg atg gcg gaa cgc gtc ggc ctc acc gtc atc        720
Leu Arg Gln Ile Glu Trp Met Ala Glu Arg Val Gly Leu Thr Val Ile
225                 230                 235                 240

cgg gcc gag ctc acc gag gtg tac ggc ggc agc ctg tgc gtc acg ctc        768
Arg Ala Glu Leu Thr Glu Val Tyr Gly Gly Ser Leu Cys Val Thr Leu
            245                 250                 255

gcc agg acc ggt tcc cgg cac ccg agg gac gag gcg ggc ctg gcc cgc        816
Ala Arg Thr Gly Ser Arg His Pro Arg Asp Glu Ala Gly Leu Ala Arg
            260                 265                 270

atc cgg gcc gcc gag gcc gcc gcg gga ctg gac ggc atg gca ccg ttc        864
Ile Arg Ala Ala Glu Ala Ala Ala Gly Leu Asp Gly Met Ala Pro Phe
        275                 280                 285

gag gcc ttc gcc cgc cgc gtc gcc gac cag cgg gac gcc ctg cgc ggc        912
Glu Ala Phe Ala Arg Arg Val Ala Asp Gln Arg Asp Ala Leu Arg Gly
    290                 295                 300

ttc ctg gac cgc tcc cgc caa gag ggc ctg ctg acc ctc ggg tac ggc        960
```

```
Phe Leu Asp Arg Ser Arg Gln Glu Gly Leu Leu Thr Leu Gly Tyr Gly
305                 310                 315                 320

gcc tcc acc aag ggc aac gtc atc ctc cag tac tgc ggg atc acc gaa       1008
Ala Ser Thr Lys Gly Asn Val Ile Leu Gln Tyr Cys Gly Ile Thr Glu
                325                 330                 335

cgg gac ctg ccg tgc atc ggc gag gtg agc gag gag aag gcg ggg cgt       1056
Arg Asp Leu Pro Cys Ile Gly Glu Val Ser Glu Glu Lys Ala Gly Arg
            340                 345                 350

ttc acc ccc ggg acg ggc atc ccc atc gtg tcc gag gag gac gcg aag       1104
Phe Thr Pro Gly Thr Gly Ile Pro Ile Val Ser Glu Glu Asp Ala Lys
        355                 360                 365

gcg cag aag ccg gac cag ttg ctg gtc ctg ccc tgg atc tac cgg gac       1152
Ala Gln Lys Pro Asp Gln Leu Leu Val Leu Pro Trp Ile Tyr Arg Asp
    370                 375                 380

ggg ttc gtc gaa cgg gag cgg gag ttc ctc gac ggc ggc ggc cga ctg       1200
Gly Phe Val Glu Arg Glu Arg Glu Phe Leu Asp Gly Gly Gly Arg Leu
385                 390                 395                 400

gtc ttc ccg ctg ccc gcg ctc gac gtc gtg tga                           1233
Val Phe Pro Leu Pro Ala Leu Asp Val Val
                405                 410


<210>  77
<211>  410
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  77

Met Ile Ala Thr Ala Cys Arg Val Cys Gly Asn Lys Glu Leu Leu Ser
1               5                   10                  15


Val Leu Asp Leu Gly Glu Gln Ala Leu Thr Gly Val Phe Pro Ala Asp
            20                  25                  30


Arg Asp Glu Val Val Pro Ser Val Pro Leu Glu Leu Val Ala Cys Ser
        35                  40                  45


Pro Ala Gly Cys Gly Leu Val Gln Leu Arg His Thr Pro Asp Pro Asp
    50                  55                  60


Leu Met Tyr Gly Glu Gly Tyr Gly Tyr Arg Ser Gly Ile Arg Pro Phe
65                  70                  75                  80


Met Val Asp His Leu His Gly Lys Val Ala Ala Val Arg Arg Leu Val
                85                  90                  95


Asp Leu Gly Pro Asp Asp Leu Val Leu Asp Ile Gly Ser Asn Asp Ala
            100                 105                 110
```

```
Thr Leu Leu Lys Gly Tyr Pro Ala Asp Gly Pro Arg Leu Val Gly Ile
        115                 120                 125

Asp Pro Thr Gly Gly Lys Phe Arg Asp Leu Tyr Pro Pro Asn Ala Glu
    130                 135                 140

Leu Val Val Asp Tyr Phe Thr Arg Ala Thr Phe Glu Asn Arg Phe Gly
145                 150                 155                 160

Ala Arg Arg Ala Lys Ala Val Thr Ser Ile Ala Met Phe Tyr Asp Leu
                165                 170                 175

Pro Asp Pro Leu Arg Phe Met Ser Asp Val Arg Asp Val Leu Ala Glu
            180                 185                 190

Asp Gly Val Trp Met Met Glu Gln Ser Tyr Leu Pro Ala Met Leu Glu
        195                 200                 205

Ala Asp Ala Tyr Asp Ile Val Cys His Glu His Leu Glu Tyr Tyr Ala
    210                 215                 220

Leu Arg Gln Ile Glu Trp Met Ala Glu Arg Val Gly Leu Thr Val Ile
225                 230                 235                 240

Arg Ala Glu Leu Thr Glu Val Tyr Gly Gly Ser Leu Cys Val Thr Leu
                245                 250                 255

Ala Arg Thr Gly Ser Arg His Pro Arg Asp Glu Ala Gly Leu Ala Arg
            260                 265                 270

Ile Arg Ala Ala Glu Ala Ala Ala Gly Leu Asp Gly Met Ala Pro Phe
        275                 280                 285

Glu Ala Phe Ala Arg Arg Val Ala Asp Gln Arg Asp Ala Leu Arg Gly
    290                 295                 300

Phe Leu Asp Arg Ser Arg Gln Glu Gly Leu Leu Thr Leu Gly Tyr Gly
305                 310                 315                 320

Ala Ser Thr Lys Gly Asn Val Ile Leu Gln Tyr Cys Gly Ile Thr Glu
                325                 330                 335

Arg Asp Leu Pro Cys Ile Gly Glu Val Ser Glu Glu Lys Ala Gly Arg
            340                 345                 350
```

```
Phe Thr Pro Gly Thr Gly Ile Pro Ile Val Ser Glu Glu Asp Ala Lys
        355                 360                 365

Ala Gln Lys Pro Asp Gln Leu Leu Val Leu Pro Trp Ile Tyr Arg Asp
    370                 375                 380

Gly Phe Val Glu Arg Glu Arg Glu Phe Leu Asp Gly Gly Gly Arg Leu
385                 390                 395                 400

Val Phe Pro Leu Pro Ala Leu Asp Val Val
                405                 410


<210>  78
<211>  1116
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1116)

<400>  78
gtg cac cgg gac aac gcc gcc gag ccg ttg gtc aaa tgc ctg gtc tgg        48
Val His Arg Asp Asn Ala Ala Glu Pro Leu Val Lys Cys Leu Val Trp
1               5                   10                  15

gac ctg gac aac acc ctc tgg cag ggc acc ctc ctc gag gag gac gag        96
Asp Leu Asp Asn Thr Leu Trp Gln Gly Thr Leu Leu Glu Glu Asp Glu
            20                  25                  30

gtc cgg ctc gcc ccg gac gtc ctg cgg acc atc acc gag ctg gac gcg       144
Val Arg Leu Ala Pro Asp Val Leu Arg Thr Ile Thr Glu Leu Asp Ala
        35                  40                  45

cgc ggc atc ctg cag gcg gtg gcc agc aag aac gac cac gat cac gcc       192
Arg Gly Ile Leu Gln Ala Val Ala Ser Lys Asn Asp His Asp His Ala
    50                  55                  60

tgg gcg aag ctc gaa cag ctc ggc gtc gcc gag tac ttc gtg ctc ccg       240
Trp Ala Lys Leu Glu Gln Leu Gly Val Ala Glu Tyr Phe Val Leu Pro
65                  70                  75                  80

agg atc ggc tgg ggc ccg aag tcg aag tcg gtc cgc gag atc gcc gac       288
Arg Ile Gly Trp Gly Pro Lys Ser Lys Ser Val Arg Glu Ile Ala Asp
                85                  90                  95

cgg ctg aac ttc gcg ccg agc acc ctc gcc ttc atc gac gac cag ccc       336
Arg Leu Asn Phe Ala Pro Ser Thr Leu Ala Phe Ile Asp Asp Gln Pro
            100                 105                 110

ttc gaa cgg gcc gag gtc acc cac gaa ctg ccg gag gtc cgc acc tac       384
Phe Glu Arg Ala Glu Val Thr His Glu Leu Pro Glu Val Arg Thr Tyr
        115                 120                 125

gcc gcc gag cag gcg acc cgg ctg acc ggc ctc ccg gag ttc agc ccg       432
```

```
Ala Ala Glu Gln Ala Thr Arg Leu Thr Gly Leu Pro Glu Phe Ser Pro
    130                 135                 140

ggc acc gtc acc gtc gac tcg acc cgc cgc cgc tcc atg tac cag gcg         480
Gly Thr Val Thr Val Asp Ser Thr Arg Arg Arg Ser Met Tyr Gln Ala
145                 150                 155                 160

tcc ttc cgc cgg gac gcc gag cgg tcc gac ttc acc gga ccc gac gcg         528
Ser Phe Arg Arg Asp Ala Glu Arg Ser Asp Phe Thr Gly Pro Asp Ala
                165                 170                 175

gac ttc ctg cgc tcg ctg gac atc cgg atg cgg atc agc cgc gcc acg         576
Asp Phe Leu Arg Ser Leu Asp Ile Arg Met Arg Ile Ser Arg Ala Thr
            180                 185                 190

ccc ctg gag ctg tcg cgg gtc gag gaa ctg acc ctg cgc acc agc cag         624
Pro Leu Glu Leu Ser Arg Val Glu Glu Leu Thr Leu Arg Thr Ser Gln
        195                 200                 205

atg aac gcc acc gga gtg cac tac tcc gag gac gag ctg cgc gcc ctc         672
Met Asn Ala Thr Gly Val His Tyr Ser Glu Asp Glu Leu Arg Ala Leu
    210                 215                 220

atc gac gac ccc gac cac gag gtg ctg gtc acc acc gtc acc gat cgc         720
Ile Asp Asp Pro Asp His Glu Val Leu Val Thr Thr Val Thr Asp Arg
225                 230                 235                 240

ttc ggt ccc tac ggc gcg gtc ggc gtc gtg ctg ctg cgg cgc ggc ccc         768
Phe Gly Pro Tyr Gly Ala Val Gly Val Val Leu Leu Arg Arg Gly Pro
                245                 250                 255

gag gcc tgg cgg atc aag ctg ctg gcc acc tcg tgc cgg gtg gtg tcg         816
Glu Ala Trp Arg Ile Lys Leu Leu Ala Thr Ser Cys Arg Val Val Ser
            260                 265                 270

ctg ggg gcc ggc acg gtg atc ctg cgc tgg ctg acg gac cag gcg cac         864
Leu Gly Ala Gly Thr Val Ile Leu Arg Trp Leu Thr Asp Gln Ala His
        275                 280                 285

cgg gcc ggg gtg cac ctc gga gcc gac ttc cgg gcc acc gaa cgc aac         912
Arg Ala Gly Val His Leu Gly Ala Asp Phe Arg Ala Thr Glu Arg Asn
    290                 295                 300

cgg atg atg gaa gtg gcc tac cgc ttc gcc gga ttc acc gac gat ccc         960
Arg Met Met Glu Val Ala Tyr Arg Phe Ala Gly Phe Thr Asp Asp Pro
305                 310                 315                 320

tgc ccg tgc cag gac gcc tcc gcc gcc acc ggc gcg atc ggc cgc ctg        1008
Cys Pro Cys Gln Asp Ala Ser Ala Ala Thr Gly Ala Ile Gly Arg Leu
                325                 330                 335

cac ctg gtg ccg tcc ccc cgg ccc gcc ccc gac acc ctc cgt ctg gaa        1056
His Leu Val Pro Ser Pro Arg Pro Ala Pro Asp Thr Leu Arg Leu Glu
            340                 345                 350

gct ccc gac ctg gcc acg ggc cgg cgg cgc ccc ggc cag gat ccc gaa        1104
Ala Pro Asp Leu Ala Thr Gly Arg Arg Arg Pro Gly Gln Asp Pro Glu
        355                 360                 365

agg acc cca tga                                                        1116
Arg Thr Pro
```

370

<210> 79
<211> 371
<212> PRT
<213> Streptomyces ambofaciens

<400> 79

Val His Arg Asp Asn Ala Ala Glu Pro Leu Val Lys Cys Leu Val Trp
1   5   10   15

Asp Leu Asp Asn Thr Leu Trp Gln Gly Thr Leu Leu Glu Glu Asp Glu
            20   25   30

Val Arg Leu Ala Pro Asp Val Leu Arg Thr Ile Thr Glu Leu Asp Ala
        35   40   45

Arg Gly Ile Leu Gln Ala Val Ala Ser Lys Asn Asp His Asp His Ala
    50   55   60

Trp Ala Lys Leu Glu Gln Leu Gly Val Ala Glu Tyr Phe Val Leu Pro
65   70   75   80

Arg Ile Gly Trp Gly Pro Lys Ser Lys Ser Val Arg Glu Ile Ala Asp
                85   90   95

Arg Leu Asn Phe Ala Pro Ser Thr Leu Ala Phe Ile Asp Asp Gln Pro
            100   105   110

Phe Glu Arg Ala Glu Val Thr His Glu Leu Pro Glu Val Arg Thr Tyr
        115   120   125

Ala Ala Glu Gln Ala Thr Arg Leu Thr Gly Leu Pro Glu Phe Ser Pro
    130   135   140

Gly Thr Val Thr Val Asp Ser Thr Arg Arg Arg Ser Met Tyr Gln Ala
145   150   155   160

Ser Phe Arg Arg Asp Ala Glu Arg Ser Asp Phe Thr Gly Pro Asp Ala
                165   170   175

Asp Phe Leu Arg Ser Leu Asp Ile Arg Met Arg Ile Ser Arg Ala Thr
            180   185   190

Pro Leu Glu Leu Ser Arg Val Glu Glu Leu Thr Leu Arg Thr Ser Gln
        195   200   205

```
Met Asn Ala Thr Gly Val His Tyr Ser Glu Asp Glu Leu Arg Ala Leu
    210                 215                 220


Ile Asp Asp Pro Asp His Glu Val Leu Val Thr Thr Val Thr Asp Arg
225                 230                 235                 240


Phe Gly Pro Tyr Gly Ala Val Gly Val Val Leu Leu Arg Arg Gly Pro
                245                 250                 255


Glu Ala Trp Arg Ile Lys Leu Leu Ala Thr Ser Cys Arg Val Val Ser
            260                 265                 270


Leu Gly Ala Gly Thr Val Ile Leu Arg Trp Leu Thr Asp Gln Ala His
        275                 280                 285


Arg Ala Gly Val His Leu Gly Ala Asp Phe Arg Ala Thr Glu Arg Asn
    290                 295                 300


Arg Met Met Glu Val Ala Tyr Arg Phe Ala Gly Phe Thr Asp Asp Pro
305                 310                 315                 320


Cys Pro Cys Gln Asp Ala Ser Ala Ala Thr Gly Ala Ile Gly Arg Leu
                325                 330                 335


His Leu Val Pro Ser Pro Arg Pro Ala Pro Asp Thr Leu Arg Leu Glu
            340                 345                 350


Ala Pro Asp Leu Ala Thr Gly Arg Arg Arg Pro Gly Gln Asp Pro Glu
        355                 360                 365


Arg Thr Pro
    370


<210>  80
<211>  1122
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1122)

<400>  80
gtg gct gac acc tcc cac gcc gac ggc acc gag gcc gag gag ctg ttc        48
Val Ala Asp Thr Ser His Ala Asp Gly Thr Glu Ala Glu Glu Leu Phe
1               5                   10                  15

acc gcg ctg gtc ggc gac cgg gcg gcc gag tgg gac cgg acg ggc gag        96
```

Thr Ala Leu Val Gly Asp Arg Ala Ala Glu Trp Asp Arg Thr Gly Glu
20 25 30

ctg ccc ctc ggc ctg ctg cac gac ctc ggc tcc cgg ggc ctg ctg tgc 144
Leu Pro Leu Gly Leu Leu His Asp Leu Gly Ser Arg Gly Leu Leu Cys
35 40 45

gca cag gcg ccc gcg gtc cac ggc ggc ctc ggc tgg acc agc cgg cgc 192
Ala Gln Ala Pro Ala Val His Gly Gly Leu Gly Trp Thr Ser Arg Arg
50 55 60

aac ggc gaa ctc acc gcg cac gtc ggc gcc ctc tgc agc tcg ttg cgg 240
Asn Gly Glu Leu Thr Ala His Val Gly Ala Leu Cys Ser Ser Leu Arg
65 70 75 80

agc gtc atg acc tcg cag ggc atg gcc gcc tgg acg ctg cgc cgg ctc 288
Ser Val Met Thr Ser Gln Gly Met Ala Ala Trp Thr Leu Arg Arg Leu
85 90 95

gcc gga gcg gac cag cag gcc tcc ctg gtg ccc cgg ttg acc ggc ggc 336
Ala Gly Ala Asp Gln Gln Ala Ser Leu Val Pro Arg Leu Thr Gly Gly
100 105 110

gaa ctg gcc gcc gtg gcg ttc acc gag gcc ggc gcc ggc agc gac ctg 384
Glu Leu Ala Ala Val Ala Phe Thr Glu Ala Gly Ala Gly Ser Asp Leu
115 120 125

tcc gcc ctg cgc acc cgc atc acc tcc gac ggc gac gaa gtc gtc gtc 432
Ser Ala Leu Arg Thr Arg Ile Thr Ser Asp Gly Asp Glu Val Val Val
130 135 140

gac ggc gtc aag gtg tgg gcg acc aac gcc gcg tac gcg gac ctg ctg 480
Asp Gly Val Lys Val Trp Ala Thr Asn Ala Ala Tyr Ala Asp Leu Leu
145 150 155 160

gtg gtc ttc ggc cgc acg gag cag ggc gcg ggc gcc gtc gtg gtg ccc 528
Val Val Phe Gly Arg Thr Glu Gln Gly Ala Gly Ala Val Val Val Pro
165 170 175

gcc tcg gcc ccc ggc gta cgc gtc gag cgc atc acc gac gcg cac ggc 576
Ala Ser Ala Pro Gly Val Arg Val Glu Arg Ile Thr Asp Ala His Gly
180 185 190

tgc cgc gcg gcc gga cac gcc gac atc cac ctg gac ggg gtc cgg ctg 624
Cys Arg Ala Ala Gly His Ala Asp Ile His Leu Asp Gly Val Arg Leu
195 200 205

ccg gca gac gcc ctg ctc cag ggc cac gac cgc acc ccc gcc ctg ctg 672
Pro Ala Asp Ala Leu Leu Gln Gly His Asp Arg Thr Pro Ala Leu Leu
210 215 220

gtc acc acc gcg ctg agc tac ggc cgg atg tcg gtg gcc tgg ggc tcc 720
Val Thr Thr Ala Leu Ser Tyr Gly Arg Met Ser Val Ala Trp Gly Ser
225 230 235 240

ctg ggc atc ctg cgc gcc tgc ctg gcc gcc gcc gca cgt cac gcc ggc 768
Leu Gly Ile Leu Arg Ala Cys Leu Ala Ala Ala Ala Arg His Ala Gly
245 250 255

gga cgg gag cag ttc ggc acg cgg ctc tcg gac cac cag ctc gtc gcc 816
Gly Arg Glu Gln Phe Gly Thr Arg Leu Ser Asp His Gln Leu Val Ala

260 265 270

cgg cac ctc gcc gaa ctg ttc gtc gcc gaa cag cac gcc gcc cgg gcg 864
Arg His Leu Ala Glu Leu Phe Val Ala Glu Gln His Ala Ala Arg Ala
275 280 285

tgc gag cac gcc agc gcc cag tgg gac gag ggc agc ccc gac atg gtg 912
Cys Glu His Ala Ser Ala Gln Trp Asp Glu Gly Ser Pro Asp Met Val
290 295 300

gtc gcc gcc gtc ctg gcc aag cac gtc gcg gcc acc ggc gcc gca cgc 960
Val Ala Ala Val Leu Ala Lys His Val Ala Ala Thr Gly Ala Ala Arg
305 310 315 320

ggg gcc gaa cgg gcc gtg cag gtg ctg gcg tcg gcc ggg gcg cgg gag 1008
Gly Ala Glu Arg Ala Val Gln Val Leu Ala Ser Ala Gly Ala Arg Glu
325 330 335

gga cac gtc gtc gca cgg gcg cac cgc gac gcc aag ctc atg gag atc 1056
Gly His Val Val Ala Arg Ala His Arg Asp Ala Lys Leu Met Glu Ile
340 345 350

atc gag ggc agc aac gag atc tgc gaa ctg gtc ctg gcc cgg cac gtg 1104
Ile Glu Gly Ser Asn Glu Ile Cys Glu Leu Val Leu Ala Arg His Val
355 360 365

atg tcc gcg gcc ggg tga 1122
Met Ser Ala Ala Gly
370

<210> 81
<211> 373
<212> PRT
<213> Streptomyces ambofaciens

<400> 81

Val Ala Asp Thr Ser His Ala Asp Gly Thr Glu Ala Glu Glu Leu Phe
1 5 10 15

Thr Ala Leu Val Gly Asp Arg Ala Ala Glu Trp Asp Arg Thr Gly Glu
20 25 30

Leu Pro Leu Gly Leu Leu His Asp Leu Gly Ser Arg Gly Leu Leu Cys
35 40 45

Ala Gln Ala Pro Ala Val His Gly Gly Leu Gly Trp Thr Ser Arg Arg
50 55 60

Asn Gly Glu Leu Thr Ala His Val Gly Ala Leu Cys Ser Ser Leu Arg
65 70 75 80

Ser Val Met Thr Ser Gln Gly Met Ala Ala Trp Thr Leu Arg Arg Leu
85 90 95

```
Ala Gly Ala Asp Gln Gln Ala Ser Leu Val Pro Arg Leu Thr Gly Gly
            100                 105                 110

Glu Leu Ala Ala Val Ala Phe Thr Glu Ala Gly Ala Gly Ser Asp Leu
        115                 120                 125

Ser Ala Leu Arg Thr Arg Ile Thr Ser Asp Gly Asp Glu Val Val Val
    130                 135                 140

Asp Gly Val Lys Val Trp Ala Thr Asn Ala Ala Tyr Ala Asp Leu Leu
145                 150                 155                 160

Val Val Phe Gly Arg Thr Glu Gln Gly Ala Gly Ala Val Val Val Pro
                165                 170                 175

Ala Ser Ala Pro Gly Val Arg Val Glu Arg Ile Thr Asp Ala His Gly
            180                 185                 190

Cys Arg Ala Ala Gly His Ala Asp Ile His Leu Asp Gly Val Arg Leu
        195                 200                 205

Pro Ala Asp Ala Leu Leu Gln Gly His Asp Arg Thr Pro Ala Leu Leu
    210                 215                 220

Val Thr Thr Ala Leu Ser Tyr Gly Arg Met Ser Val Ala Trp Gly Ser
225                 230                 235                 240

Leu Gly Ile Leu Arg Ala Cys Leu Ala Ala Ala Ala Arg His Ala Gly
                245                 250                 255

Gly Arg Glu Gln Phe Gly Thr Arg Leu Ser Asp His Gln Leu Val Ala
            260                 265                 270

Arg His Leu Ala Glu Leu Phe Val Ala Glu Gln His Ala Ala Arg Ala
        275                 280                 285

Cys Glu His Ala Ser Ala Gln Trp Asp Glu Gly Ser Pro Asp Met Val
    290                 295                 300

Val Ala Ala Val Leu Ala Lys His Val Ala Ala Thr Gly Ala Ala Arg
305                 310                 315                 320

Gly Ala Glu Arg Ala Val Gln Val Leu Ala Ser Ala Gly Ala Arg Glu
                325                 330                 335
```

Gly His Val Val Ala Arg Ala His Arg Asp Ala Lys Leu Met Glu Ile
340 345 350

Ile Glu Gly Ser Asn Glu Ile Cys Glu Leu Val Leu Ala Arg His Val
355 360 365

Met Ser Ala Ala Gly
370

<210> 82
<211> 312
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(312)

<400> 82
atg acc acg acg tcc ggt cgg ccc gac ccc acc ggc acg acc ccc acc 48
Met Thr Thr Thr Ser Gly Arg Pro Asp Pro Thr Gly Thr Thr Pro Thr
1 5 10 15

gcc gac gag gtc gcc ggg gaa ctg ctc ggg ttc ctc gag gac cgc acc 96
Ala Asp Glu Val Ala Gly Glu Leu Leu Gly Phe Leu Glu Asp Arg Thr
20 25 30

aag acc acc tgg gag cgc gac cag gac ctg ttc gcc gtc ggc ggg atg 144
Lys Thr Thr Trp Glu Arg Asp Gln Asp Leu Phe Ala Val Gly Gly Met
35 40 45

tcc tcg ctg ttc gcc atg cag ctc gtc gtg cac ctg gag aag acc tac 192
Ser Ser Leu Phe Ala Met Gln Leu Val Val His Leu Glu Lys Thr Tyr
50 55 60

ggc atc gtc atc agc ggc gcc gac ctg atg ctc gac aac ttc cgc acc 240
Gly Ile Val Ile Ser Gly Ala Asp Leu Met Leu Asp Asn Phe Arg Thr
65 70 75 80

gtc gac gcg atg gtc cgg ctg gtc gga cgg ctg gcc gcg ccc ggc gag 288
Val Asp Ala Met Val Arg Leu Val Gly Arg Leu Ala Ala Pro Gly Glu
85 90 95

gcg acc ggg cac gca ggt ggc tga 312
Ala Thr Gly His Ala Gly Gly
100

<210> 83
<211> 103
<212> PRT
<213> Streptomyces ambofaciens

<400> 83

Met Thr Thr Thr Ser Gly Arg Pro Asp Pro Thr Gly Thr Thr Pro Thr
1 5 10 15

```
Ala Asp Glu Val Ala Gly Glu Leu Leu Gly Phe Leu Glu Asp Arg Thr
            20                  25                  30

Lys Thr Thr Trp Glu Arg Asp Gln Asp Leu Phe Ala Val Gly Gly Met
        35                  40                  45

Ser Ser Leu Phe Ala Met Gln Leu Val Val His Leu Glu Lys Thr Tyr
    50                  55                  60

Gly Ile Val Ile Ser Gly Ala Asp Leu Met Leu Asp Asn Phe Arg Thr
65                  70                  75                  80

Val Asp Ala Met Val Arg Leu Val Gly Arg Leu Ala Ala Pro Gly Glu
                85                  90                  95

Ala Thr Gly His Ala Gly Gly
            100


<210>  84
<211>  867
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(867)

<400>  84
gtg ccc gat tcc aag gaa aat tct ccg ctc gtc gtg ctc ggc gcg ggc       48
Val Pro Asp Ser Lys Glu Asn Ser Pro Leu Val Val Leu Gly Ala Gly
1               5                   10                  15

gtc atg ggc acg gcc atc gcg gca ctc gcc gtc gga cac ggg cac ccg       96
Val Met Gly Thr Ala Ile Ala Ala Leu Ala Val Gly His Gly His Pro
            20                  25                  30

gtc aca ctg gtc gac acc tcc gcc ggg gcg cgc gcg gcc gcc ccc gac      144
Val Thr Leu Val Asp Thr Ser Ala Gly Ala Arg Ala Ala Ala Pro Asp
        35                  40                  45

gcg gtc gcg ctg cat ctg cgg acg gcc cgg ctg atg ggc gcg ctg ccc      192
Ala Val Ala Leu His Leu Arg Thr Ala Arg Leu Met Gly Ala Leu Pro
    50                  55                  60

cac gac cgc ccg ccc ggg gag ctg acc gtc gag gag gcg ccg gcc gcc      240
His Asp Arg Pro Pro Gly Glu Leu Thr Val Glu Glu Ala Pro Ala Ala
65                  70                  75                  80

gtc gcc acc gcg acc gcc gtg atc gag gcc gtc acc gag gac ccc gag      288
Val Ala Thr Ala Thr Ala Val Ile Glu Ala Val Thr Glu Asp Pro Glu
                85                  90                  95
```

```
cgg aag gcc gag gtg ctg gcg gac ctg gcg tcc gtg gcg cgc ccg ggg       336
Arg Lys Ala Glu Val Leu Ala Asp Leu Ala Ser Val Ala Arg Pro Gly
            100                 105                 110

acg ctg ctc gtc agc aac acc tcg ggc gtc ccc atc gac gag ctg gcc       384
Thr Leu Leu Val Ser Asn Thr Ser Gly Val Pro Ile Asp Glu Leu Ala
        115                 120                 125

gac gcc gtc ccc cgc ccc gag gac ctc gtc ggc gtg cac ttc atg aac       432
Asp Ala Val Pro Arg Pro Glu Asp Leu Val Gly Val His Phe Met Asn
    130                 135                 140

ccc gcg tac gtg atc ccc acg gtc gag gtg gtc ctc gga ccg cgc agc       480
Pro Ala Tyr Val Ile Pro Thr Val Glu Val Val Leu Gly Pro Arg Ser
145                 150                 155                 160

gga gag gcg gcc gcc cgg gcc acc cgg gac ctg ctg tcc ggc ctg ggc       528
Gly Glu Ala Ala Ala Arg Ala Thr Arg Asp Leu Leu Ser Gly Leu Gly
                165                 170                 175

cgc cgg ggc atc gtc gtc ggc gac ggc gcc ggc ttc gtg acc agc cgc       576
Arg Arg Gly Ile Val Val Gly Asp Gly Ala Gly Phe Val Thr Ser Arg
            180                 185                 190

ctg ctg cac cgg atg ctg aac gac gcc atc gcg gtg gtg cac gag ggc       624
Leu Leu His Arg Met Leu Asn Asp Ala Ile Ala Val Val His Glu Gly
        195                 200                 205

cgg gcc acc ccg gag acc gtg gac gcg ctg atg cgc gac tgc atc ggc       672
Arg Ala Thr Pro Glu Thr Val Asp Ala Leu Met Arg Asp Cys Ile Gly
    210                 215                 220

cac cgc acc gga ccc ctg gcc acg gcc gac ctg atc gga ctg gac aac       720
His Arg Thr Gly Pro Leu Ala Thr Ala Asp Leu Ile Gly Leu Asp Asn
225                 230                 235                 240

ctg gcc gac tcg ctg cgg gtg atg cac gaa cgg acc ggc gat ccg gcg       768
Leu Ala Asp Ser Leu Arg Val Met His Glu Arg Thr Gly Asp Pro Ala
                245                 250                 255

ctc cgc ccg agc gag ctg ctg ctg gac aag gtc cgc cag ggc ctg ctc       816
Leu Arg Pro Ser Glu Leu Leu Leu Asp Lys Val Arg Gln Gly Leu Leu
            260                 265                 270

ggc cgc aag agc ggc cgg gga ttc tac gac tac cag gag gcc acg cga       864
Gly Arg Lys Ser Gly Arg Gly Phe Tyr Asp Tyr Gln Glu Ala Thr Arg
        275                 280                 285

tga                                                                   867


<210>  85
<211>  288
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  85

Val Pro Asp Ser Lys Glu Asn Ser Pro Leu Val Val Leu Gly Ala Gly
1               5                   10                  15
```

```
Val Met Gly Thr Ala Ile Ala Ala Leu Ala Val Gly His Gly His Pro
            20                  25                  30

Val Thr Leu Val Asp Thr Ser Ala Gly Ala Arg Ala Ala Ala Pro Asp
        35                  40                  45

Ala Val Ala Leu His Leu Arg Thr Ala Arg Leu Met Gly Ala Leu Pro
    50                  55                  60

His Asp Arg Pro Pro Gly Glu Leu Thr Val Glu Glu Ala Pro Ala Ala
65                  70                  75                  80

Val Ala Thr Ala Thr Ala Val Ile Glu Ala Val Thr Glu Asp Pro Glu
                85                  90                  95

Arg Lys Ala Glu Val Leu Ala Asp Leu Ala Ser Val Ala Arg Pro Gly
            100                 105                 110

Thr Leu Leu Val Ser Asn Thr Ser Gly Val Pro Ile Asp Glu Leu Ala
        115                 120                 125

Asp Ala Val Pro Arg Pro Glu Asp Leu Val Gly Val His Phe Met Asn
    130                 135                 140

Pro Ala Tyr Val Ile Pro Thr Val Glu Val Val Leu Gly Pro Arg Ser
145                 150                 155                 160

Gly Glu Ala Ala Ala Arg Ala Thr Arg Asp Leu Leu Ser Gly Leu Gly
                165                 170                 175

Arg Arg Gly Ile Val Val Gly Asp Gly Ala Gly Phe Val Thr Ser Arg
            180                 185                 190

Leu Leu His Arg Met Leu Asn Asp Ala Ile Ala Val Val His Glu Gly
        195                 200                 205

Arg Ala Thr Pro Glu Thr Val Asp Ala Leu Met Arg Asp Cys Ile Gly
    210                 215                 220

His Arg Thr Gly Pro Leu Ala Thr Ala Asp Leu Ile Gly Leu Asp Asn
225                 230                 235                 240

Leu Ala Asp Ser Leu Arg Val Met His Glu Arg Thr Gly Asp Pro Ala
                245                 250                 255
```

Leu Arg Pro Ser Glu Leu Leu Leu Asp Lys Val Arg Gln Gly Leu Leu
260 265 270

Gly Arg Lys Ser Gly Arg Gly Phe Tyr Asp Tyr Gln Glu Ala Thr Arg
275 280 285

<210> 86
<211> 1040
<212> DNA
<213> Streptomyces fradiae

<400> 86
ggcaggagcc acccgtgaca gggctgccgc ggcccgccgt ccgggtgccg ttccacgatc 60

tgcgggacgt gcacgcggcc acgggggtgg agtcggagat cggcggcgcg ctgctgcgcg 120

tcgccgcgcg cgggcgctat ctgctgggtg ccgaactcgc cgcgttcgag gagcggttcg 180

ccgagtactg cggcaacgcc cactgtgtcg ccgtgggcag cgggctcgac gacgctcgtc 240

tggcgctgtg ggcgctcggg gtgggcgagg gcgacgaggt gatcgtgccc tcgcacacgt 300

tcatcgcgtc ctggctcgcg gtgtcggcga cgggtgccac cccggtgccg gtcgagcccg 360

gtgatcccgg cgagccgggg cccggggcgt tcctgctcga cccggaccgg ctggaggccg 420

cgctgacccc gcggaccagg gccgtgatgc ccgtgcatct ctacgggcac ccggtggatc 480

tggacccggt cggggcgttc gcggagccgc acgggctggc cgtcgtggag gacgcggcgc 540

aggccacggc ccgttaccgc gggaggcgga tcggcagcgg ccaccgcacg gcgttcagct 600

tctacccggg gaagaacctg ggcgcgctcg gcgacggcgg tgccgtggtc acctcggacc 660

cggaactcgc ggaccggctg cggctgttgc gcaactacgg cgcccgggag aagtaccggc 720

acgaggagcg gggcaccaac tcccgcctgg acgagctgca ggcggccgtg ctgtcggtca 780

agctgccgta cctggacgcc tggaacaccc gccgccggga gatcgccgcc cgctacggcg 840

aggcgctggc cggtctgccg ggcgtcaccg tgccggaggg ccgcgtggcg gagccggtct 900

ggcatcagta cgtgctgcgc agcccgtacc gcgaccggtt gcggcggcgg ctggccgagg 960

cgggggtgga gaccctggtc cactatccgg tggccgtgca cgcgtcgggc gcgtacgcgg 1020

gcgcggggcc gtgtcccgcc 1040

<210> 87
<211> 388
<212> PRT
<213> Streptomyces fradiae

<400> 87

Met Thr Gly Leu Pro Arg Pro Ala Val Arg Val Pro Phe His Asp Leu
1 5 10 15

```
Arg Asp Val His Ala Ala Thr Gly Val Glu Ser Glu Ile Gly Gly Ala
            20                  25                  30

Leu Leu Arg Val Ala Ala Arg Gly Arg Tyr Leu Leu Gly Ala Glu Leu
        35                  40                  45

Ala Ala Phe Glu Glu Arg Phe Ala Glu Tyr Cys Gly Asn Ala His Cys
    50                  55                  60

Val Ala Val Gly Ser Gly Leu Asp Asp Ala Arg Leu Ala Leu Trp Ala
65                  70                  75                  80

Leu Gly Val Gly Glu Gly Asp Glu Val Ile Val Pro Ser His Thr Phe
                85                  90                  95

Ile Ala Ser Trp Leu Ala Val Ser Ala Thr Gly Ala Thr Pro Val Pro
            100                 105                 110

Val Glu Pro Gly Asp Pro Gly Glu Pro Gly Pro Gly Ala Phe Leu Leu
        115                 120                 125

Asp Pro Asp Arg Leu Glu Ala Ala Leu Thr Pro Arg Thr Arg Ala Val
    130                 135                 140

Met Pro Val His Leu Tyr Gly His Pro Val Asp Leu Asp Pro Val Gly
145                 150                 155                 160

Ala Phe Ala Glu Pro His Gly Leu Ala Val Val Glu Asp Ala Ala Gln
                165                 170                 175

Ala Thr Ala Arg Tyr Arg Gly Arg Arg Ile Gly Ser Gly His Arg Thr
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Ala Phe Ser Phe Tyr Pro Gly Lys Asn Leu Gly Ala Leu Gly Asp Gly
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Gly Ala Val Val Thr Ser Asp Pro Glu Leu Ala Asp Arg Leu Arg Leu
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Leu Arg Asn Tyr Gly Ala Arg Glu Lys Tyr Arg His Glu Glu Arg Gly
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Thr Asn Ser Arg Leu Asp Glu Leu Gln Ala Ala Val Leu Ser Val Lys
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Leu Pro Tyr Leu Asp Ala Trp Asn Thr Arg Arg Arg Glu Ile Ala Ala
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Arg Tyr Gly Glu Ala Leu Ala Gly Leu Pro Gly Val Thr Val Pro Glu
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Gly Arg Val Ala Glu Pro Val Trp His Gln Tyr Val Leu Arg Ser Pro
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Tyr Arg Asp Arg Leu Arg Arg Arg Leu Ala Glu Ala Gly Val Glu Thr
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Leu Val His Tyr Pro Val Ala Val His Ala Ser Gly Ala Tyr Ala Gly
325 330 335

Ala Gly Pro Cys Pro Ala Gly Gly Leu Pro Arg Ala Glu Arg Leu Ala
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Gly Glu Val Leu Ser Leu Pro Ile Gly Pro His Leu Pro Asp Glu Ala
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Thr Lys Ala Leu Ala Ser Ala Gly Arg Ser Leu Leu Ala Val Glu Ile
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Ile Arg Leu Ile Gly Asn Leu Pro Phe Val Ser Gly Thr Lys Ile Leu
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Gln Thr Leu Val Val Met Pro Arg Arg Arg Pro Ser Val Pro Trp Arg
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Glu Arg Thr Asp Tyr Gln Arg Phe Thr Gln Gln Ile Phe Asp Thr Gly
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Gln Met Thr Ile Gly Glu Ala Ala Arg Lys Val Leu Arg Arg Gly His
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1               5                   10                  15

ccg acc ctg gga gtc gcc gag gaa ctg gtc gcg cgc ggc cac cgg gtg        96
Pro Thr Leu Gly Val Ala Glu Glu Leu Val Ala Arg Gly His Arg Val
            20                  25                  30
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acg ttc gcg ctg tcc gag gac ctc gcc gag cgg gcc cgg ctg atc ggc        144
Thr Phe Ala Leu Ser Glu Asp Leu Ala Glu Arg Ala Arg Leu Ile Gly
        35                  40                  45

gcc gag gtg gtc acc tat ccg gtg gac agg caa cgg ttc ctg gac cag        192
Ala Glu Val Val Thr Tyr Pro Val Asp Arg Gln Arg Phe Leu Asp Gln
    50                  55                  60

atg gtg ccg cgg cag gac gcg gac gag tac acg gac gag gac gag ttc        240
Met Val Pro Arg Gln Asp Ala Asp Glu Tyr Thr Asp Glu Asp Glu Phe
65                  70                  75                  80

gtc cgg gtc ctg gag tgg ctg ctg gac atg acg gtg cag acc atg gaa        288
Val Arg Val Leu Glu Trp Leu Leu Asp Met Thr Val Gln Thr Met Glu
                85                  90                  95

ccg ctg gag agg cac ttc gcc ggg gac cgg ccc gac gtc gtc gtc aac        336
Pro Leu Glu Arg His Phe Ala Gly Asp Arg Pro Asp Val Val Val Asn
            100                 105                 110

gat ccg tcg tcg ctg tgg acg gga cgg ctg ctg gcg gac cgg tgg ggc        384
Asp Pro Ser Ser Leu Trp Thr Gly Arg Leu Leu Ala Asp Arg Trp Gly
        115                 120                 125

atc ccg gtc atc cgc agc act ccg acc tat gcc gcc aac gaa cac tgg        432
Ile Pro Val Ile Arg Ser Thr Pro Thr Tyr Ala Ala Asn Glu His Trp
    130                 135                 140

tcg ctg cat ccg ccg gtc gac tcg gcc gag ccg ccg gac gac ccc gag        480
Ser Leu His Pro Pro Val Asp Ser Ala Glu Pro Pro Asp Asp Pro Glu
145                 150                 155                 160

ctg cac aag ctg ctc gcg cgg atc gag cgg ctg ctg gag gag cag ggc        528
Leu His Lys Leu Leu Ala Arg Ile Glu Arg Leu Leu Glu Glu Gln Gly
                165                 170                 175

gtc gag cac gac ctg gcc ggc ttc acc ggg gtc ctg cac ggc ggt ccg        576
Val Glu His Asp Leu Ala Gly Phe Thr Gly Val Leu His Gly Gly Pro
            180                 185                 190

gcc ctg ctg tac atg ccc cgc tcg ttc cag tac gcg ggc gag acc ttc        624
Ala Leu Leu Tyr Met Pro Arg Ser Phe Gln Tyr Ala Gly Glu Thr Phe
        195                 200                 205

gac gca cag cac cac ttc gtc ggc ccc tgc ccg ccc cgc acc gcg ttc        672
Asp Ala Gln His His Phe Val Gly Pro Cys Pro Pro Arg Thr Ala Phe
    210                 215                 220

cac ggc gag tgg agg ccg ggg gac gac gac ggc cgg ccc ctg gtg ctg        720
His Gly Glu Trp Arg Pro Gly Asp Asp Asp Gly Arg Pro Leu Val Leu
225                 230                 235                 240

gtg agt ctc gga acc ctg tac aac gac cgg ccg gac ttc ttc cgc acc        768
Val Ser Leu Gly Thr Leu Tyr Asn Asp Arg Pro Asp Phe Phe Arg Thr
                245                 250                 255

tgc ctg gag gcg ttc ggc gac gag ccc tgg aac gtg ctt ctg gtg ctg        816
Cys Leu Glu Ala Phe Gly Asp Glu Pro Trp Asn Val Leu Leu Val Leu
            260                 265                 270
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ggc ggc ggg gtg ccc gcg gcc gac ctg ggc ccg ctt ccc ggc aat gtc        864
Gly Gly Gly Val Pro Ala Ala Asp Leu Gly Pro Leu Pro Gly Asn Val
        275                 280                 285

cgg gtg acc gac ttc gtg tcg ctg cgc gac gtc ctg ccg cac acg gcg        912
Arg Val Thr Asp Phe Val Ser Leu Arg Asp Val Leu Pro His Thr Ala
    290                 295                 300

gtg gtg gtg aac cac ggt ggg atg agc acc gcc atg gag gtg ttc tcg        960
Val Val Val Asn His Gly Gly Met Ser Thr Ala Met Glu Val Phe Ser
305                 310                 315                 320

cac ggt gtg ccg gtg gtg gcg atc ccg gtg atg ccg gag ccc cgg gcc       1008
His Gly Val Pro Val Val Ala Ile Pro Val Met Pro Glu Pro Arg Ala
                325                 330                 335

acc gcg cgg cgg atc gtc gaa ctg ggc ctg ggc gac cag ctg ctg aac       1056
Thr Ala Arg Arg Ile Val Glu Leu Gly Leu Gly Asp Gln Leu Leu Asn
            340                 345                 350

tcg gag ctg acg gcc gag tcc ctg cgt gcc acg gta cgg cgg gtg ctg       1104
Ser Glu Leu Thr Ala Glu Ser Leu Arg Ala Thr Val Arg Arg Val Leu
        355                 360                 365

gcg gac tcc gcg atc ccg ggg aac atg cgc ggg ttc cgg gag cag atc       1152
Ala Asp Ser Ala Ile Pro Gly Asn Met Arg Gly Phe Arg Glu Gln Ile
    370                 375                 380

agg gcg gcc ggc ggg gcg ccc gcg gcg gcc gac gcg atc gag gga ctg       1200
Arg Ala Ala Gly Gly Ala Pro Ala Ala Ala Asp Ala Ile Glu Gly Leu
385                 390                 395                 400

ctg ccc cgg gtg ggc tga                                               1218
Leu Pro Arg Val Gly
                405


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Met Ala His Ile Ala Phe Phe Ile Leu Pro Val Ala Gly His Val Asn
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Pro Thr Leu Gly Val Ala Glu Glu Leu Val Ala Arg Gly His Arg Val
            20                  25                  30


Thr Phe Ala Leu Ser Glu Asp Leu Ala Glu Arg Ala Arg Leu Ile Gly
        35                  40                  45


Ala Glu Val Val Thr Tyr Pro Val Asp Arg Gln Arg Phe Leu Asp Gln
    50                  55                  60


Met Val Pro Arg Gln Asp Ala Asp Glu Tyr Thr Asp Glu Asp Glu Phe
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65 70 75 80

Val Arg Val Leu Glu Trp Leu Leu Asp Met Thr Val Gln Thr Met Glu
85 90 95

Pro Leu Glu Arg His Phe Ala Gly Asp Arg Pro Asp Val Val Val Asn
100 105 110

Asp Pro Ser Ser Leu Trp Thr Gly Arg Leu Leu Ala Asp Arg Trp Gly
115 120 125

Ile Pro Val Ile Arg Ser Thr Pro Thr Tyr Ala Ala Asn Glu His Trp
130 135 140

Ser Leu His Pro Pro Val Asp Ser Ala Glu Pro Pro Asp Asp Pro Glu
145 150 155 160

Leu His Lys Leu Leu Ala Arg Ile Glu Arg Leu Leu Glu Glu Gln Gly
165 170 175

Val Glu His Asp Leu Ala Gly Phe Thr Gly Val Leu His Gly Gly Pro
180 185 190

Ala Leu Leu Tyr Met Pro Arg Ser Phe Gln Tyr Ala Gly Glu Thr Phe
195 200 205

Asp Ala Gln His His Phe Val Gly Pro Cys Pro Pro Arg Thr Ala Phe
210 215 220

His Gly Glu Trp Arg Pro Gly Asp Asp Asp Gly Arg Pro Leu Val Leu
225 230 235 240

Val Ser Leu Gly Thr Leu Tyr Asn Asp Arg Pro Asp Phe Phe Arg Thr
245 250 255

Cys Leu Glu Ala Phe Gly Asp Glu Pro Trp Asn Val Leu Leu Val Leu
260 265 270

Gly Gly Gly Val Pro Ala Ala Asp Leu Gly Pro Leu Pro Gly Asn Val
275 280 285

Arg Val Thr Asp Phe Val Ser Leu Arg Asp Val Leu Pro His Thr Ala
290 295 300

Val Val Val Asn His Gly Gly Met Ser Thr Ala Met Glu Val Phe Ser
305 310 315 320

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His Gly Val Pro Val Val Ala Ile Pro Val Met Pro Glu Pro Arg Ala
                325                 330                 335

Thr Ala Arg Arg Ile Val Glu Leu Gly Leu Gly Asp Gln Leu Leu Asn
            340                 345                 350

Ser Glu Leu Thr Ala Glu Ser Leu Arg Ala Thr Val Arg Arg Val Leu
        355                 360                 365

Ala Asp Ser Ala Ile Pro Gly Asn Met Arg Gly Phe Arg Glu Gln Ile
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Arg Ala Ala Gly Gly Ala Pro Ala Ala Ala Asp Ala Ile Glu Gly Leu
385                 390                 395                 400

Leu Pro Arg Val Gly
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Met Leu Ile Thr Glu Thr Ala Val Pro Asp Val Phe Arg Ile Asp Pro
1               5                   10                  15

gaa ccg ctg ccg gac cac cgg ggc cgg ttc tac gaa gcg gtg cgc cgc           96
Glu Pro Leu Pro Asp His Arg Gly Arg Phe Tyr Glu Ala Val Arg Arg
            20                  25                  30

ggg ccg ctg gag gcc gcc gtc ggg cac tcg gtc gag gtc cgg cag gtc          144
Gly Pro Leu Glu Ala Ala Val Gly His Ser Val Glu Val Arg Gln Val
        35                  40                  45

cac tgc acc gtc tcc ggg cgc aac gta ctg cgc ggc ctg cac gcc acc          192
His Cys Thr Val Ser Gly Arg Asn Val Leu Arg Gly Leu His Ala Thr
    50                  55                  60

acc ctg ccg ccg ggc cag gcc aag atc ctc acc tgt gtg cgg ggt gcg          240
Thr Leu Pro Pro Gly Gln Ala Lys Ile Leu Thr Cys Val Arg Gly Ala
65                  70                  75                  80

gcg ctg act atg gtg gtc gac atg agg gtc ggg tca ccg ggc ttc gga          288
Ala Leu Thr Met Val Val Asp Met Arg Val Gly Ser Pro Gly Phe Gly
                85                  90                  95
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cgg tac gag gcg gtg cgg cag gat gcc ccg tcg ggc acc gcg ctc tac 336
Arg Tyr Glu Ala Val Arg Gln Asp Ala Pro Ser Gly Thr Ala Leu Tyr
100 105 110

ctg ccg gac ggc atc ggc ctg ggc tac gtg gcc ctc gcg gac gac aca 384
Leu Pro Asp Gly Ile Gly Leu Gly Tyr Val Ala Leu Ala Asp Asp Thr
115 120 125

tgc atg aac tac ctg tgc acc gag gag tac gtc ccg ggc atg gtc atc 432
Cys Met Asn Tyr Leu Cys Thr Glu Glu Tyr Val Pro Gly Met Val Ile
130 135 140

gac gtg gac gcc ctg gac ccc gaa ctc ggc ctg ccg tgg gga ctg acc 480
Asp Val Asp Ala Leu Asp Pro Glu Leu Gly Leu Pro Trp Gly Leu Thr
145 150 155 160

ggg gat ccc gtc cgc tcc gcc cgg gac gcg gcg gcg ccg tcc ctg cgg 528
Gly Asp Pro Val Arg Ser Ala Arg Asp Ala Ala Ala Pro Ser Leu Arg
165 170 175

gcg gcc gcg gcg gcg gga att ctg ccc acg tac gag gac tgc tta cgg 576
Ala Ala Ala Ala Ala Gly Ile Leu Pro Thr Tyr Glu Asp Cys Leu Arg
180 185 190

gtg cgc acg tcc gtg ccc gcc cct ccc gac cgg act cgg ctc tga 621
Val Arg Thr Ser Val Pro Ala Pro Pro Asp Arg Thr Arg Leu
195 200 205

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Met Leu Ile Thr Glu Thr Ala Val Pro Asp Val Phe Arg Ile Asp Pro
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Glu Pro Leu Pro Asp His Arg Gly Arg Phe Tyr Glu Ala Val Arg Arg
20 25 30

Gly Pro Leu Glu Ala Ala Val Gly His Ser Val Glu Val Arg Gln Val
35 40 45

His Cys Thr Val Ser Gly Arg Asn Val Leu Arg Gly Leu His Ala Thr
50 55 60

Thr Leu Pro Pro Gly Gln Ala Lys Ile Leu Thr Cys Val Arg Gly Ala
65 70 75 80

Ala Leu Thr Met Val Val Asp Met Arg Val Gly Ser Pro Gly Phe Gly
85 90 95

Arg Tyr Glu Ala Val Arg Gln Asp Ala Pro Ser Gly Thr Ala Leu Tyr

100 105 110

Leu Pro Asp Gly Ile Gly Leu Gly Tyr Val Ala Leu Ala Asp Asp Thr
115 120 125

Cys Met Asn Tyr Leu Cys Thr Glu Glu Tyr Val Pro Gly Met Val Ile
130 135 140

Asp Val Asp Ala Leu Asp Pro Glu Leu Gly Leu Pro Trp Gly Leu Thr
145 150 155 160

Gly Asp Pro Val Arg Ser Ala Arg Asp Ala Ala Ala Pro Ser Leu Arg
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Ala Ala Ala Ala Ala Gly Ile Leu Pro Thr Tyr Glu Asp Cys Leu Arg
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Val Arg Thr Ser Val Pro Ala Pro Pro Asp Arg Thr Arg Leu
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Pro Ala Ala Arg His Asp Phe Asp Ser Leu Val Ser Asp Ala Cys Ala
20 25 30

gag tta ctc ggt tcg ctc cgc cgg gcg gac cag cgc aga aga ggt gag 144
Glu Leu Leu Gly Ser Leu Arg Arg Ala Asp Gln Arg Arg Arg Gly Glu
35 40 45

cag tac ata cgc ggg ctg ctc acg gca cag gga cgc aag acc gcc cgg 192
Gln Tyr Ile Arg Gly Leu Leu Thr Ala Gln Gly Arg Lys Thr Ala Arg
50 55 60

aac ctc gcc gcc ttc gtc gga gag ggc gcg gcg gaa cag agc ctg cac 240
Asn Leu Ala Ala Phe Val Gly Glu Gly Ala Ala Glu Gln Ser Leu His

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65                  70                  75                  80

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His Phe Val Ala Gly Ser Thr Trp Asp Trp Gly Glu Val Arg Ala Ala
                85                  90                  95

ctg gcc cgc tac gtg gac gac agg ctg acc ccc gac gcc tgg gtg atc       336
Leu Ala Arg Tyr Val Asp Asp Arg Leu Thr Pro Asp Ala Trp Val Ile
            100                 105                 110

tgg ccg atg gtg gtc tcc aag gcg ggg gtg cgc tcc gtc ggg gtg agc       384
Trp Pro Met Val Val Ser Lys Ala Gly Val Arg Ser Val Gly Val Ser
        115                 120                 125

cgg cgc ttc gtc tcc gac ctg ggc cgg gtg gtg agc tgc cag cag agt       432
Arg Arg Phe Val Ser Asp Leu Gly Arg Val Val Ser Cys Gln Gln Ser
    130                 135                 140

cac ggg ctg tgg ctg gcc tcg ggc acg acg gcc gcc ccg gtc agc tgg       480
His Gly Leu Trp Leu Ala Ser Gly Thr Thr Ala Ala Pro Val Ser Trp
145                 150                 155                 160

cgc ctg acg ctg ggc ggc ggc cgg agc ggg gag ggc aca ccc cgg cac       528
Arg Leu Thr Leu Gly Gly Gly Arg Ser Gly Glu Gly Thr Pro Arg His
                165                 170                 175

ccc ggc gca ccc ggt gag gag gag aac atc gtc cgc ctg gtg gcc gaa       576
Pro Gly Ala Pro Gly Glu Glu Glu Asn Ile Val Arg Leu Val Ala Glu
            180                 185                 190

gcc gct cag gcc aac cgc tcc ttg gcc cgc ccc gtg gtg atg gac gca       624
Ala Ala Gln Ala Asn Arg Ser Leu Ala Arg Pro Val Val Met Asp Ala
        195                 200                 205

cgc gcg gcc gtg ctg cca cga ctg gtg cga ggg ctc ggt ctc gcg ggc       672
Arg Ala Ala Val Leu Pro Arg Leu Val Arg Gly Leu Gly Leu Ala Gly
    210                 215                 220

ctg ccc ttc atg gtg cgg gtg ggc ggg aac ctc cgg ctg gcc tcg gcg       720
Leu Pro Phe Met Val Arg Val Gly Gly Asn Leu Arg Leu Ala Ser Ala
225                 230                 235                 240

agc ggc cgc ggc ccg gtg gac cac cac acg ggg acc acc tcg gcc cag       768
Ser Gly Arg Gly Pro Val Asp His His Thr Gly Thr Thr Ser Ala Gln
                245                 250                 255

cag ttg atg gag cag ctc aag cgg ttg agc cgc ccc gtg gag ttg cgg       816
Gln Leu Met Glu Gln Leu Lys Arg Leu Ser Arg Pro Val Glu Leu Arg
            260                 265                 270

ggc tcc ctc agc ctc gtc gcc ccg cac ccc gtc gtc ctg ccg ggt gtg       864
Gly Ser Leu Ser Leu Val Ala Pro His Pro Val Val Leu Pro Gly Val
        275                 280                 285

gtc ccg agg cgg acg ctg acg ctg ctg ggg ggt gtg gcg gnnnnnnnnn        913
Val Pro Arg Arg Thr Leu Thr Leu Leu Gly Gly Val Ala
    290                 295                 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnn                   960
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<210> 112
<211> 301
<212> PRT
<213> Streptomyces ambofaciens

<400> 112

Met Thr Leu Arg Thr Leu Arg Pro Ala Gly Ala Ala Pro Pro Val Gly
1 5 10 15

Pro Ala Ala Arg His Asp Phe Asp Ser Leu Val Ser Asp Ala Cys Ala
20 25 30

Glu Leu Leu Gly Ser Leu Arg Arg Ala Asp Gln Arg Arg Arg Gly Glu
35 40 45

Gln Tyr Ile Arg Gly Leu Leu Thr Ala Gln Gly Arg Lys Thr Ala Arg
50 55 60

Asn Leu Ala Ala Phe Val Gly Glu Gly Ala Ala Glu Gln Ser Leu His
65 70 75 80

His Phe Val Ala Gly Ser Thr Trp Asp Trp Gly Glu Val Arg Ala Ala
85 90 95

Leu Ala Arg Tyr Val Asp Asp Arg Leu Thr Pro Asp Ala Trp Val Ile
100 105 110

Trp Pro Met Val Val Ser Lys Ala Gly Val Arg Ser Val Gly Val Ser
115 120 125

Arg Arg Phe Val Ser Asp Leu Gly Arg Val Val Ser Cys Gln Gln Ser
130 135 140

His Gly Leu Trp Leu Ala Ser Gly Thr Thr Ala Ala Pro Val Ser Trp
145 150 155 160

Arg Leu Thr Leu Gly Gly Gly Arg Ser Gly Glu Gly Thr Pro Arg His
165 170 175

Pro Gly Ala Pro Gly Glu Glu Glu Asn Ile Val Arg Leu Val Ala Glu
180 185 190

Ala Ala Gln Ala Asn Arg Ser Leu Ala Arg Pro Val Val Met Asp Ala
195 200 205

Arg Ala Ala Val Leu Pro Arg Leu Val Arg Gly Leu Gly Leu Ala Gly
210 215 220

Leu Pro Phe Met Val Arg Val Gly Gly Asn Leu Arg Leu Ala Ser Ala
225 230 235 240

Ser Gly Arg Gly Pro Val Asp His His Thr Gly Thr Thr Ser Ala Gln
245 250 255

Gln Leu Met Glu Gln Leu Lys Arg Leu Ser Arg Pro Val Glu Leu Arg
260 265 270

Gly Ser Leu Ser Leu Val Ala Pro His Pro Val Val Leu Pro Gly Val
275 280 285

Val Pro Arg Arg Thr Leu Thr Leu Leu Gly Gly Val Ala
290 295 300

<210> 113
<211> 1008
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(1008)

<400> 113
atg cag gca att cgg cat cac gtc atg ctc gtc atg gcc ttc gtg acc 48
Met Gln Ala Ile Arg His His Val Met Leu Val Met Ala Phe Val Thr
1 5 10 15

gtc gcc acg act ttc ctt ctc tgg ccg tcg acg caa tcc gcg caa gcg 96
Val Ala Thr Thr Phe Leu Leu Trp Pro Ser Thr Gln Ser Ala Gln Ala
20 25 30

ttt ccc ccg acc ccg aag cag acg gta ctg aac cac ctc cgc gcc att 144
Phe Pro Pro Thr Pro Lys Gln Thr Val Leu Asn His Leu Arg Ala Ile
35 40 45

tcc ggg aat cac atc gtc tcc gga cag cac aac aag gag ccc gcc tcc 192
Ser Gly Asn His Ile Val Ser Gly Gln His Asn Lys Glu Pro Ala Ser
50 55 60

gcc ccg ggc cag tac acc cag cag gtc aag gac gtc acc ggg cag tac 240
Ala Pro Gly Gln Tyr Thr Gln Gln Val Lys Asp Val Thr Gly Gln Tyr
65 70 75 80

ccc ggc ctg tgg ggc ggt gac ctg atg ttc gcc gcg gcg gac gtg gcc 288
Pro Gly Leu Trp Gly Gly Asp Leu Met Phe Ala Ala Ala Asp Val Ala
85 90 95

ggc cgc cag cgc gtc gtc gac cag gcc agg acc gag tgg gcg aac gga 336
Gly Arg Gln Arg Val Val Asp Gln Ala Arg Thr Glu Trp Ala Asn Gly
100 105 110

```
tcg ctg gtc tcg ctc acc tgg cac gtc tgc ccg ccg acc ggc ggc agc      384
Ser Leu Val Ser Leu Thr Trp His Val Cys Pro Pro Thr Gly Gly Ser
        115                 120                 125

acc tgt gcg ttc gag ggc ggc gtc aag tcc acg ctg acg aac gcg cag      432
Thr Cys Ala Phe Glu Gly Gly Val Lys Ser Thr Leu Thr Asn Ala Gln
    130                 135                 140

ttc tcg cag gtc ctc acg gag ggc agt gcc ctg aac agc gca tgg aag      480
Phe Ser Gln Val Leu Thr Glu Gly Ser Ala Leu Asn Ser Ala Trp Lys
145                 150                 155                 160

cgg cgc ctg gac gag gtc gtc ccg tac ctg cag cag ctg gag aac gcg      528
Arg Arg Leu Asp Glu Val Val Pro Tyr Leu Gln Gln Leu Glu Asn Ala
                165                 170                 175

ggc gtc ccc gtc ctc ttc cgg ccg ctg cac gag atg aac gaa tcc tgg      576
Gly Val Pro Val Leu Phe Arg Pro Leu His Glu Met Asn Glu Ser Trp
            180                 185                 190

aac tgg tgg gga aac cgg ccc gga gcg aac ggc agc gca cgc ctc tac      624
Asn Trp Trp Gly Asn Arg Pro Gly Ala Asn Gly Ser Ala Arg Leu Tyr
        195                 200                 205

cag atc acc cgc gat cac ctc gcc ggg acg aaa ggg ctg gac aat ctg      672
Gln Ile Thr Arg Asp His Leu Ala Gly Thr Lys Gly Leu Asp Asn Leu
    210                 215                 220

atc tgg gtc tgg aac gtc cag gac aat ccg gcg gga aac tgg aac agc      720
Ile Trp Val Trp Asn Val Gln Asp Asn Pro Ala Gly Asn Trp Asn Ser
225                 230                 235                 240

tac tat ccg gga gat cag tac gtg gac gtc gtt tcg ctg gac gtc tgg      768
Tyr Tyr Pro Gly Asp Gln Tyr Val Asp Val Val Ser Leu Asp Val Trp
                245                 250                 255

tac aag agc cac ccg agt tcc gcc gac tac cag cag atg cgg agc atc      816
Tyr Lys Ser His Pro Ser Ser Ala Asp Tyr Gln Gln Met Arg Ser Ile
            260                 265                 270

gcg gga aca aaa ccc atg gcc ctc gcg gag ctg ggc aaa atg ccg acc      864
Ala Gly Thr Lys Pro Met Ala Leu Ala Glu Leu Gly Lys Met Pro Thr
        275                 280                 285

gcc gcg ctg ctg gac agc cag acg cgg tgg aca tgg ttc atg atg tgg      912
Ala Ala Leu Leu Asp Ser Gln Thr Arg Trp Thr Trp Phe Met Met Trp
    290                 295                 300

tcc gag cat ctg cgc ggg aac aat tcc aac gcc gaa ata cag acg gcg      960
Ser Glu His Leu Arg Gly Asn Asn Ser Asn Ala Glu Ile Gln Thr Ala
305                 310                 315                 320

tat ttc cac ccc cgt gta ctg aac cag ggg gag gtc gca ctg ccc tga     1008
Tyr Phe His Pro Arg Val Leu Asn Gln Gly Glu Val Ala Leu Pro
                325                 330                 335
```

<210> 114
<211> 335
<212> PRT
<213> Streptomyces ambofaciens

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<400>  114

Met Gln Ala Ile Arg His His Val Met Leu Val Met Ala Phe Val Thr
1               5                   10                  15

Val Ala Thr Thr Phe Leu Leu Trp Pro Ser Thr Gln Ser Ala Gln Ala
            20                  25                  30

Phe Pro Pro Thr Pro Lys Gln Thr Val Leu Asn His Leu Arg Ala Ile
        35                  40                  45

Ser Gly Asn His Ile Val Ser Gly Gln His Asn Lys Glu Pro Ala Ser
    50                  55                  60

Ala Pro Gly Gln Tyr Thr Gln Gln Val Lys Asp Val Thr Gly Gln Tyr
65                  70                  75                  80

Pro Gly Leu Trp Gly Gly Asp Leu Met Phe Ala Ala Ala Asp Val Ala
                85                  90                  95

Gly Arg Gln Arg Val Val Asp Gln Ala Arg Thr Glu Trp Ala Asn Gly
            100                 105                 110

Ser Leu Val Ser Leu Thr Trp His Val Cys Pro Pro Thr Gly Gly Ser
        115                 120                 125

Thr Cys Ala Phe Glu Gly Gly Val Lys Ser Thr Leu Thr Asn Ala Gln
    130                 135                 140

Phe Ser Gln Val Leu Thr Glu Gly Ser Ala Leu Asn Ser Ala Trp Lys
145                 150                 155                 160

Arg Arg Leu Asp Glu Val Val Pro Tyr Leu Gln Gln Leu Glu Asn Ala
                165                 170                 175

Gly Val Pro Val Leu Phe Arg Pro Leu His Glu Met Asn Glu Ser Trp
            180                 185                 190

Asn Trp Trp Gly Asn Arg Pro Gly Ala Asn Gly Ser Ala Arg Leu Tyr
        195                 200                 205

Gln Ile Thr Arg Asp His Leu Ala Gly Thr Lys Gly Leu Asp Asn Leu
    210                 215                 220

Ile Trp Val Trp Asn Val Gln Asp Asn Pro Ala Gly Asn Trp Asn Ser
225                 230                 235                 240
```

Tyr Tyr Pro Gly Asp Gln Tyr Val Asp Val Val Ser Leu Asp Val Trp
245 250 255

Tyr Lys Ser His Pro Ser Ser Ala Asp Tyr Gln Gln Met Arg Ser Ile
260 265 270

Ala Gly Thr Lys Pro Met Ala Leu Ala Glu Leu Gly Lys Met Pro Thr
275 280 285

Ala Ala Leu Leu Asp Ser Gln Thr Arg Trp Thr Trp Phe Met Met Trp
290 295 300

Ser Glu His Leu Arg Gly Asn Asn Ser Asn Ala Glu Ile Gln Thr Ala
305 310 315 320

Tyr Phe His Pro Arg Val Leu Asn Gln Gly Glu Val Ala Leu Pro
325 330 335

<210> 115
<211> 1038
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(1038)

<220>
<221> CDS2
<222> (190)..(1038)

<400> 115
atg acg tgc ggg ctc ggg cgg gaa cgg ctc cac cgt aga aag gaa gcg 48
Met Thr Cys Gly Leu Gly Arg Glu Arg Leu His Arg Arg Lys Glu Ala
1 5 10 15

gtc cgg cgt ccc ggt cca aaa gag cac ggg aaa acc gga ccg atc gcg 96
Val Arg Arg Pro Gly Pro Lys Glu His Gly Lys Thr Gly Pro Ile Ala
20 25 30

cgt ctg tgc cct ggc ggg ccg gct cgt tcc aag ccc tgg tcg cgg ttg 144
Arg Leu Cys Pro Gly Gly Pro Ala Arg Ser Lys Pro Trp Ser Arg Leu
35 40 45

gcc ccc tac ggt ggt acg acc gac gac aag gcg acg ggg gcg acg atg 192
Ala Pro Tyr Gly Gly Thr Thr Asp Asp Lys Ala Thr Gly Ala Thr Met
50 55 60

cgt atc gcg gtg aca ggg gcg gcg ggc agt ctg ggc agg cgg gtg gtg 240
Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val Val
65 70 75 80

```
cag ctg ctc gcg gac cgg gcc gac gtg gac gtc gtg gcg atg acc agg         288
Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr Arg
                85                  90                  95

cgg aag ctg cct gcc gag gca cta ccg ccg ggg gtg gag tgc gcc gtc         336
Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala Val
            100                 105                 110

gcc gac tac gcc gac ccg ccc gct ctg cgt gcg gcg ctg aag ggc gtg         384
Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly Val
        115                 120                 125

gac act ctg gtc ctc gtc tcc agc gac ggg ccc gac gca cgg gtg ctg         432
Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val Leu
    130                 135                 140

ctg cac cac cgc aac gtc gtc gcc gcc gtg gtg gcc gag cgc gtc ggc         480
Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val Gly
145                 150                 155                 160

cat gtc gcg gca ctg agc agc gtc gac gcc gac tcg gcc tcc ccg ttc         528
His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro Phe
                165                 170                 175

tgc tac gcc gtc gtc aac cgg ctc acc gag gat ctg ctg ctc gcc tcc         576
Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala Ser
            180                 185                 190

ggc gtg ccg tgc tcg ttc gcc agg gcc tcg ctg tac atc gag ttc ttc         624
Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe Phe
        195                 200                 205

cta ggc tgg ctc acc cag gcg cgc tcg acc ggg ctg ctg agg ctg ccg         672
Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu Pro
    210                 215                 220

gca gcc gat ggc cgg gtg tcc ctg gtg gcg cgc gac gac gtg gcc cgc         720
Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala Arg
225                 230                 235                 240

gcc ctc gcc gcc ctc gcg gtg ggc ggg ccg acc ggc cgt cac cac gac         768
Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His Asp
                245                 250                 255

atc acg gga ccc gag tcg acg gac ctg gca ggc atc gcc tcc acg gcg         816
Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr Ala
            260                 265                 270

gcg gag gtg tgg cgg aca ccg gtc gcc tac gtg gac atc ccg gcc gac         864
Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala Asp
        275                 280                 285

acg tac tct gcc gaa aca gcg gcg acc ggc ctg gat ccc tgg tgg ctc         912
Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp Leu
    290                 295                 300

tac gcc ttc tcc tcc ctg ttc gcc tcg gta cgc gaa cag cgc tgg gat         960
Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp Asp
305                 310                 315                 320

cgg gtc cgc gac gac tgc gcc cag ctc acc ggc cgc ttg ccc cgc act        1008
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Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg Thr
                325                 330                 335

ctc cgc gac gtc ctg tca gaa cgc gcg tga                                1038
Leu Arg Asp Val Leu Ser Glu Arg Ala
            340                 345


<210>  116
<211>  345
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  116

Met Thr Cys Gly Leu Gly Arg Glu Arg Leu His Arg Arg Lys Glu Ala
1               5                   10                  15


Val Arg Arg Pro Gly Pro Lys Glu His Gly Lys Thr Gly Pro Ile Ala
            20                  25                  30


Arg Leu Cys Pro Gly Gly Pro Ala Arg Ser Lys Pro Trp Ser Arg Leu
        35                  40                  45


Ala Pro Tyr Gly Gly Thr Thr Asp Asp Lys Ala Thr Gly Ala Thr Met
    50                  55                  60


Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val Val
65                  70                  75                  80


Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr Arg
                85                  90                  95


Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala Val
            100                 105                 110


Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly Val
        115                 120                 125


Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val Leu
    130                 135                 140


Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val Gly
145                 150                 155                 160


His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro Phe
                165                 170                 175


Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala Ser
            180                 185                 190
```

Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe Phe
195 200 205

Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu Pro
210 215 220

Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala Arg
225 230 235 240

Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His Asp
245 250 255

Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr Ala
260 265 270

Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala Asp
275 280 285

Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp Leu
290 295 300

Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp Asp
305 310 315 320

Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg Thr
325 330 335

Leu Arg Asp Val Leu Ser Glu Arg Ala
340 345

<210> 117
<211> 282
<212> PRT
<213> Streptomyces ambofaciens

<400> 117

Met Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val
1 5 10 15

Val Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr
20 25 30

Arg Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala
35 40 45

```
Val Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly
    50                  55                  60

Val Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val
65                  70                  75                  80

Leu Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val
                85                  90                  95

Gly His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro
            100                 105                 110

Phe Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala
        115                 120                 125

Ser Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe
    130                 135                 140

Phe Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu
145                 150                 155                 160

Pro Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala
                165                 170                 175

Arg Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His
            180                 185                 190

Asp Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr
        195                 200                 205

Ala Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala
    210                 215                 220

Asp Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp
225                 230                 235                 240

Leu Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp
                245                 250                 255

Asp Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg
            260                 265                 270

Thr Leu Arg Asp Val Leu Ser Glu Arg Ala
        275                 280

<210>  118
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<211>  975
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(975)

<400>  118
atg ctc cga cgc cgt ctc gga ggg ccg tca ggc ccc ctc gtc agt gcc        48
Met Leu Arg Arg Arg Leu Gly Gly Pro Ser Gly Pro Leu Val Ser Ala
1               5                   10                  15

ctg tgc ctg ggc gcg atg ccc ttc ggc acc acc gtc gac gag aag acg        96
Leu Cys Leu Gly Ala Met Pro Phe Gly Thr Thr Val Asp Glu Lys Thr
            20                  25                  30

tcc ttc gcc atc ctc gac cgg ttc gtc gag gcc ggc ggc agt ctc gtc       144
Ser Phe Ala Ile Leu Asp Arg Phe Val Glu Ala Gly Gly Ser Leu Val
        35                  40                  45

gac acc gcc gac aac tac gcg ttc tgg gct ccc ggc ggg acc ggg gac       192
Asp Thr Ala Asp Asn Tyr Ala Phe Trp Ala Pro Gly Gly Thr Gly Asp
    50                  55                  60

gag agc gag aac acc gtc ggg cgc tgg ctg gcg agc cgc cgc cgc cgc       240
Glu Ser Glu Asn Thr Val Gly Arg Trp Leu Ala Ser Arg Arg Arg Arg
65                  70                  75                  80

gac gag gtg gtg atc tcc acc aag gtg ggt gcc cgc ccc acc gtc ccc       288
Asp Glu Val Val Ile Ser Thr Lys Val Gly Ala Arg Pro Thr Val Pro
                85                  90                  95

ggc agc ggc ctg gag acc gcc gaa ggg ctg tcg gct ccc gtc ata cgg       336
Gly Ser Gly Leu Glu Thr Ala Glu Gly Leu Ser Ala Pro Val Ile Arg
            100                 105                 110

aag gcc gcg gag gac agc ctg cga cgc ctg ggc acc gat cgc atc gat       384
Lys Ala Ala Glu Asp Ser Leu Arg Arg Leu Gly Thr Asp Arg Ile Asp
        115                 120                 125

ctg tac tgg acc cac atc gag gac cgg acc gtc cct ctg gag gag acg       432
Leu Tyr Trp Thr His Ile Glu Asp Arg Thr Val Pro Leu Glu Glu Thr
    130                 135                 140

ctc gga gct ctc gac gag ctg gtc ggc ggc ggc aag gtg gcg gtg ctg       480
Leu Gly Ala Leu Asp Glu Leu Val Gly Gly Gly Lys Val Ala Val Leu
145                 150                 155                 160

ggc tgc tcc aac cac gcg ggc tgg cgc atc gaa cgg gcc cgc gcg ctc       528
Gly Cys Ser Asn His Ala Gly Trp Arg Ile Glu Arg Ala Arg Ala Leu
                165                 170                 175

gcc cgg acc aac ggc tgg acg gcg tac acc tgc gtc cag cag cgc tac       576
Ala Arg Thr Asn Gly Trp Thr Ala Tyr Thr Cys Val Gln Gln Arg Tyr
            180                 185                 190

tcc tac ctt cag ccg cgc ttc gac gtc gga ctg ccg gag agc gga cac       624
Ser Tyr Leu Gln Pro Arg Phe Asp Val Gly Leu Pro Glu Ser Gly His
        195                 200                 205
```

```
gtc cac gcg acc tcc gaa ctc ctc gac cac gta cgc agc gag ccc gac      672
Val His Ala Thr Ser Glu Leu Leu Asp His Val Arg Ser Glu Pro Asp
    210                 215                 220

ctg acg ctg ctg gcc tac tcg tcc ctg ctc tcg ggc gcg tac acc cgg      720
Leu Thr Leu Leu Ala Tyr Ser Ser Leu Leu Ser Gly Ala Tyr Thr Arg
225                 230                 235                 240

ccg gac aag acc ctg tcc gcc gcc tac gac cac ccg ggc acc ggg cag      768
Pro Asp Lys Thr Leu Ser Ala Ala Tyr Asp His Pro Gly Thr Gly Gln
                245                 250                 255

cgg ctg acc gtg ctg cgg gag gtg gcc gcc gag ctc ggt gcc acc gcc      816
Arg Leu Thr Val Leu Arg Glu Val Ala Ala Glu Leu Gly Ala Thr Ala
            260                 265                 270

aac cag gtg gtg ctg tcc tgg ttg ctc gga ggt gat ccg ccg gtg atc      864
Asn Gln Val Val Leu Ser Trp Leu Leu Gly Gly Asp Pro Pro Val Ile
        275                 280                 285

ccg atc gtg ggg gtg agt tcc gtc gag cag ctg gac gag gtg ctg gcc      912
Pro Ile Val Gly Val Ser Ser Val Glu Gln Leu Asp Glu Val Leu Ala
    290                 295                 300

gcc gtc gag ctg gag ctg ccc cgg gag acg agg gca cgg ctg gac ctc      960
Ala Val Glu Leu Glu Leu Pro Arg Glu Thr Arg Ala Arg Leu Asp Leu
305                 310                 315                 320

gcc ggg cgg ggc tga                                                  975
Ala Gly Arg Gly


<210>  119
<211>  324
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  119

Met Leu Arg Arg Arg Leu Gly Gly Pro Ser Gly Pro Leu Val Ser Ala
1               5                   10                  15


Leu Cys Leu Gly Ala Met Pro Phe Gly Thr Thr Val Asp Glu Lys Thr
            20                  25                  30


Ser Phe Ala Ile Leu Asp Arg Phe Val Glu Ala Gly Gly Ser Leu Val
        35                  40                  45


Asp Thr Ala Asp Asn Tyr Ala Phe Trp Ala Pro Gly Gly Thr Gly Asp
    50                  55                  60


Glu Ser Glu Asn Thr Val Gly Arg Trp Leu Ala Ser Arg Arg Arg Arg
65                  70                  75                  80
```

```
Asp Glu Val Val Ile Ser Thr Lys Val Gly Ala Arg Pro Thr Val Pro
                85                  90                  95

Gly Ser Gly Leu Glu Thr Ala Glu Gly Leu Ser Ala Pro Val Ile Arg
            100                 105                 110

Lys Ala Ala Glu Asp Ser Leu Arg Arg Leu Gly Thr Asp Arg Ile Asp
        115                 120                 125

Leu Tyr Trp Thr His Ile Glu Asp Arg Thr Val Pro Leu Glu Glu Thr
    130                 135                 140

Leu Gly Ala Leu Asp Glu Leu Val Gly Gly Gly Lys Val Ala Val Leu
145                 150                 155                 160

Gly Cys Ser Asn His Ala Gly Trp Arg Ile Glu Arg Ala Arg Ala Leu
                165                 170                 175

Ala Arg Thr Asn Gly Trp Thr Ala Tyr Thr Cys Val Gln Gln Arg Tyr
            180                 185                 190

Ser Tyr Leu Gln Pro Arg Phe Asp Val Gly Leu Pro Glu Ser Gly His
        195                 200                 205

Val His Ala Thr Ser Glu Leu Leu Asp His Val Arg Ser Glu Pro Asp
    210                 215                 220

Leu Thr Leu Leu Ala Tyr Ser Ser Leu Leu Ser Gly Ala Tyr Thr Arg
225                 230                 235                 240

Pro Asp Lys Thr Leu Ser Ala Ala Tyr Asp His Pro Gly Thr Gly Gln
                245                 250                 255

Arg Leu Thr Val Leu Arg Glu Val Ala Ala Glu Leu Gly Ala Thr Ala
            260                 265                 270

Asn Gln Val Val Leu Ser Trp Leu Leu Gly Gly Asp Pro Pro Val Ile
        275                 280                 285

Pro Ile Val Gly Val Ser Ser Val Glu Gln Leu Asp Glu Val Leu Ala
    290                 295                 300

Ala Val Glu Leu Glu Leu Pro Arg Glu Thr Arg Ala Arg Leu Asp Leu
305                 310                 315                 320

Ala Gly Arg Gly
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<210>  120
<211>  1227
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1227)

<400>  120
gtg acg ccc gag gcg gac gtc ggt acg cgg tgg gag ccg gag ttc gac          48
Val Thr Pro Glu Ala Asp Val Gly Thr Arg Trp Glu Pro Glu Phe Asp
1               5                   10                  15

atg ctg ccc ggc ata ccc gac ctg cgg gcc ttt ccc cgc gga cgg tgg          96
Met Leu Pro Gly Ile Pro Asp Leu Arg Ala Phe Pro Arg Gly Arg Trp
            20                  25                  30

gcg gac gcg gtg cgg gag gcc acc ggc gca ctg acc tgg ggc gag ctc         144
Ala Asp Ala Val Arg Glu Ala Thr Gly Ala Leu Thr Trp Gly Glu Leu
        35                  40                  45

ggc tac ccc gat ccg gcc ggt ctc gcc cgg ctc cgg cag cgg ctc gcg         192
Gly Tyr Pro Asp Pro Ala Gly Leu Ala Arg Leu Arg Gln Arg Leu Ala
    50                  55                  60

gcc tac ctc gtg cgg gga cgc ggc gcg tcg ctg gaa gcc cgg cag ctc         240
Ala Tyr Leu Val Arg Gly Arg Gly Ala Ser Leu Glu Ala Arg Gln Leu
65                  70                  75                  80

gtc gtc tgc gcg ggc acg ctg gac gcg gtg cgc agg ctg tgc cgg gtc         288
Val Val Cys Ala Gly Thr Leu Asp Ala Val Arg Arg Leu Cys Arg Val
                85                  90                  95

ctg cgg acc gag ggc cac acc cac atg gcc ctg gag gac cct ggc tgg         336
Leu Arg Thr Glu Gly His Thr His Met Ala Leu Glu Asp Pro Gly Trp
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Ser Arg Leu Ser Ala Thr Val Gly Ala Glu Gly Leu Val Pro Val Pro
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gtt ccc gtg gac ggc gac ggc ctg cgg gtc gac ctg ctg cgg cgc gcg         432
Val Pro Val Asp Gly Asp Gly Leu Arg Val Asp Leu Leu Arg Arg Ala
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cct cag gtc cgg tcg gtg atc gtc gct ccc gcc cac cag ttc ccg acc         480
Pro Gln Val Arg Ser Val Ile Val Ala Pro Ala His Gln Phe Pro Thr
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Gly Val Val Leu Ala Pro Ala Arg Arg Gly Glu Leu Val Ala Trp Ala
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cgc gag gtc gac ggc ctg gtg ctg gag gac gac tac gac gcc gag ttc         576
Arg Glu Val Asp Gly Leu Val Leu Glu Asp Asp Tyr Asp Ala Glu Phe
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Arg Tyr Asp Arg His Pro Val Gly Ala Leu Gln Gly Met Ala Pro Glu
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His Val Ala Leu Leu Gly Ser Val Ser Lys Thr Leu Ser Pro Ala Leu
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cgg atc ggc tgg gcg gtg acc ccg ccg cgc tgg acc gag gcc ctg ggc       720
Arg Ile Gly Trp Ala Val Thr Pro Pro Arg Trp Thr Glu Ala Leu Gly
225                 230                 235                 240

gcg gag cac gtc ggg ggc gta cca ccg ccc gtc atc gac cag gag gcg       768
Ala Glu His Val Gly Gly Val Pro Pro Pro Val Ile Asp Gln Glu Ala
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ttc gcc cgg ttc ctg gcc cgc ggg tcc tac gac cgg tac ctg cgg gcg       816
Phe Ala Arg Phe Leu Ala Arg Gly Ser Tyr Asp Arg Tyr Leu Arg Ala
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gca cgg ctg cgc tac aaa cgg cgc cgc gat cac ctc atg gga gaa ctc       864
Ala Arg Leu Arg Tyr Lys Arg Arg Arg Asp His Leu Met Gly Glu Leu
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cac ctg ctg ctg tcc ctg acg gac tgc tcg gcg ccc acc gtc gtc agg       960
His Leu Leu Leu Ser Leu Thr Asp Cys Ser Ala Pro Thr Val Val Arg
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gag gcg gcg cgg cgt gac gtg agg ctg gcg gat ctc gac gcc tac cgg      1008
Glu Ala Ala Arg Arg Asp Val Arg Leu Ala Asp Leu Asp Ala Tyr Arg
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Met Ala Arg Ala Glu His His Pro Thr Ala Arg Ala Gly Asp Ser Gly
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Gly Ala Arg Ala Val Ala Ala Ala Gly Pro Ala Leu Val Leu Gly Tyr
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Gly Asn Leu Ala Asp His Ala Val Pro Gly Ala Val Arg Arg Leu Ala
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Gln Ala Ile Asp Ala Ala Arg Arg His Asp Arg Arg His Val Asp Ala
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Gly Tyr Pro Asp Pro Ala Gly Leu Ala Arg Leu Arg Gln Arg Leu Ala
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Ala Tyr Leu Val Arg Gly Arg Gly Ala Ser Leu Glu Ala Arg Gln Leu
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Val Val Cys Ala Gly Thr Leu Asp Ala Val Arg Arg Leu Cys Arg Val
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Leu Arg Thr Glu Gly His Thr His Met Ala Leu Glu Asp Pro Gly Trp
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Ser Arg Leu Ser Ala Thr Val Gly Ala Glu Gly Leu Val Pro Val Pro
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Val Pro Val Asp Gly Asp Gly Leu Arg Val Asp Leu Leu Arg Arg Ala
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Pro Gln Val Arg Ser Val Ile Val Ala Pro Ala His Gln Phe Pro Thr
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Gly Val Val Leu Ala Pro Ala Arg Arg Gly Glu Leu Val Ala Trp Ala
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Arg Glu Val Asp Gly Leu Val Leu Glu Asp Asp Tyr Asp Ala Glu Phe
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Arg Tyr Asp Arg His Pro Val Gly Ala Leu Gln Gly Met Ala Pro Glu
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His Val Ala Leu Leu Gly Ser Val Ser Lys Thr Leu Ser Pro Ala Leu
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Arg Ile Gly Trp Ala Val Thr Pro Pro Arg Trp Thr Glu Ala Leu Gly
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Glu Ala Ala Arg Arg Asp Val Arg Leu Ala Asp Leu Asp Ala Tyr Arg
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Met Ala Arg Ala Glu His His Pro Thr Ala Arg Ala Gly Asp Ser Gly
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gacgagctgc cgggcttcca gcgacgcgcc gcgtccccgc acgaggtagg ccgcgagccg  10020
ctgccggagc cgggcgagac cggccggatc ggggtagccg agctcgcccc aggtcagtgc  10080
gccggtggcc tcccgcaccg cgtccgccca ccgtccgcgg ggaaaggccc gcaggtcggg  10140
tatgccgggc agcatgtcga actccggctc ccaccgcgta ccgacgtccg cctcgggcgt  10200
caccggagcg gggacggcct gcgccctgac ccgggtggcc gagccgctgc gcgcctccag  10260
gtacccctcc gcgacgagct gcgcgtaggc ctccgtcacc acccaccgcg agcagcccag  10320
gtccgccgcc agcgccctgc tcggcggcag cgcgctgccg gaggcgatcc gcccaccggt  10380
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caccgccgcc cgcagggcac ggctcagccg gacgtgcagc gggccgtccg ccggcccgcc 10440

cagttcgaga aaggttcccc atgccgggtc ggtccggtcg tcgcccacgg cagccgatgc 10500

tacccaccgc cccgcgacgg ccgggcggcg gcgtccacgg gcccggtgca cactggatgg 10560

cgtggcggag acggaccggc atctcgacca gcggctggag caggccatca tggacctgct 10620

ggagcgacgg gcggccactg cctcgatctg tccgtccgac gccgcgcgtc gggtccacga 10680

gggtgacgac gagggctggc gagccctgct ggaacccgcg cgccgagcgg cctggcgtct 10740

ggtggggtcc ggcgaggtcg aggtgaccca ggccggccgg cccgtcacgc aggccgaggc 10800

ccgcgggccc gtccgcattc gtcgggcggg ttcctgacgg ctcgatccga aggcggaact 10860

cccgtgcccc ggcggcacgg gagctcgacg ccgggaggtc agcgccgcag ggtgagcaca 10920

cccggccgcc acggcagctg gtcgtagggg ccgcccgcgg tgggtgactt gccctggtag 10980

aggaaccgca ggttgcaggg gtcgacggtc atggtctggt cggggttgtc gcggaccagg 11040

tcaccgtggc tgatgtcgtt ggtccaggtg gccccgctgt tggccttgcc cgcgaagggg 11100

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tgaaccttgt agacctgcac gccctcgaac aggttggcct tcgtgtcgct catgatcgtc 11280

gtgtacgacg agccgaagct gcccgggaag ttcccgatcg gcatgctcgc ccggtagatc 11340

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ttgtgggtca cggtggtgaa gtccttgacc gccgcccacc cgttcgccgg ctgcgccagc 11760

acacccgtcg acgaccaccg gtacgccgac ggaagggcac acgccccgtc cgtcgggggc 11820

gtcccggtca ggccggacca cttctgcccg ctgccaccga cgcacgtccc gatctgcacc 11880

gccgtgccgt tggccgtacc ggcgcccgcg gcctccaggc acagcccgga ctccacgccg 11940

acgaccgtgc cgtcggagtt cacccgccac tgctggttcg caccgccgga acagctccag 12000

atctgcaccc gcgtcccggg tgtggtggcg tgacccggaa cgtccaggca cttgttgccg 12060

tacacggtca gccgacggtc gtccgtcaac gtccactgct gattgctccc gccccagcag 12120

tcgtatatct gcag 12134

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<211> 1164
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(1164)

<400> 141
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Met Thr Leu Arg Thr Leu Arg Pro Ala Gly Ala Ala Pro Pro Val Gly
1 5 10 15

ccc gcc gcg cgg cac gac ttc gac tcg ctc gtc tcc gac gca tgt gcg 96
Pro Ala Ala Arg His Asp Phe Asp Ser Leu Val Ser Asp Ala Cys Ala
20 25 30

gag tta ctc ggt tcg ctc cgc cgg gcg gac cag cgc aga aga ggt gag 144
Glu Leu Leu Gly Ser Leu Arg Arg Ala Asp Gln Arg Arg Arg Gly Glu
35 40 45

cag tac ata cgc ggg ctg ctc acg gca cag gga cgc aag acc gcc cgg 192
Gln Tyr Ile Arg Gly Leu Leu Thr Ala Gln Gly Arg Lys Thr Ala Arg
50 55 60

aac ctc gcc gcc ttc gtc gga gag ggc gcg gcg gaa cag agc ctg cac 240
Asn Leu Ala Ala Phe Val Gly Glu Gly Ala Ala Glu Gln Ser Leu His
65 70 75 80

cac ttc gtc gcc ggg tcg acc tgg gac tgg ggc gag gtg cgg gcc gcg 288
His Phe Val Ala Gly Ser Thr Trp Asp Trp Gly Glu Val Arg Ala Ala
85 90 95

ctg gcc cgc tac gtg gac gac agg ctg acc ccc gac gcc tgg gtg atc 336
Leu Ala Arg Tyr Val Asp Asp Arg Leu Thr Pro Asp Ala Trp Val Ile
100 105 110

tgg ccg atg gtg gtc tcc aag gcg ggg gtg cgc tcc gtc ggg gtg agc 384
Trp Pro Met Val Val Ser Lys Ala Gly Val Arg Ser Val Gly Val Ser
115 120 125

cgg cgc ttc gtc tcc gac ctg ggc cgg gtg gtg agc tgc cag cag agt 432
Arg Arg Phe Val Ser Asp Leu Gly Arg Val Val Ser Cys Gln Gln Ser
130 135 140

cac ggg ctg tgg ctg gcc tcg ggc acg acg gcc gcc ccg gtc agc tgg 480
His Gly Leu Trp Leu Ala Ser Gly Thr Thr Ala Ala Pro Val Ser Trp
145 150 155 160

cgc ctg acg ctg ggc ggc ggc cgg agc ggg gag ggc aca ccc cgg cac 528
Arg Leu Thr Leu Gly Gly Gly Arg Ser Gly Glu Gly Thr Pro Arg His
165 170 175

ccc ggc gca ccc ggt gag gag gag aac atc gtc cgc ctg gtg gcc gaa 576
Pro Gly Ala Pro Gly Glu Glu Glu Asn Ile Val Arg Leu Val Ala Glu
180 185 190

gcc gct cag gcc aac cgc tcc ttg gcc cgc ccc gtg gtg atg gac gca 624

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Ala Ala Gln Ala Asn Arg Ser Leu Ala Arg Pro Val Val Met Asp Ala
        195                 200                 205

cgc gcg gcc gtg ctg cca cga ctg gtg cga ggg ctc ggt ctc gcg ggc      672
Arg Ala Ala Val Leu Pro Arg Leu Val Arg Gly Leu Gly Leu Ala Gly
    210                 215                 220

ctg ccc ttc atg gtg cgg gtg ggc ggg aac ctc cgg ctg gcc tcg gcg      720
Leu Pro Phe Met Val Arg Val Gly Gly Asn Leu Arg Leu Ala Ser Ala
225                 230                 235                 240

agc ggc cgc ggc ccg gtg gac cac cac acg ggg acc acc tcg gcc cag      768
Ser Gly Arg Gly Pro Val Asp His His Thr Gly Thr Thr Ser Ala Gln
                245                 250                 255

cag ttg atg gag cag ctc aag cgg ttg agc cgc ccc gtg gag ttg cgg      816
Gln Leu Met Glu Gln Leu Lys Arg Leu Ser Arg Pro Val Glu Leu Arg
            260                 265                 270

ggc tcc ctc agc ctc gtc gcc ccg cac ccc gtc gtc ctg ccg ggt gtg      864
Gly Ser Leu Ser Leu Val Ala Pro His Pro Val Val Leu Pro Gly Val
        275                 280                 285

gtc ccg agg cgg acg ctg acg ctg ctg ggg gtg tgg cgg ggc aac cgc      912
Val Pro Arg Arg Thr Leu Thr Leu Leu Gly Val Trp Arg Gly Asn Arg
    290                 295                 300

cgg cgc ccc gcc gac ctg tgg ctg acc gac ctc acg tcc tgg gac cgc      960
Arg Arg Pro Ala Asp Leu Trp Leu Thr Asp Leu Thr Ser Trp Asp Arg
305                 310                 315                 320

ggc gcc ctg ctg cgg ctg gcg atg ctc acc gaa cag gtc gac gcc gac     1008
Gly Ala Leu Leu Arg Leu Ala Met Leu Thr Glu Gln Val Asp Ala Asp
                325                 330                 335

ttc gac cgg gtg agc gtg ggc gtg ggc atg cgc gac ttc gaa gga cgg     1056
Phe Asp Arg Val Ser Val Gly Val Gly Met Arg Asp Phe Glu Gly Arg
            340                 345                 350

tcg ttc cag ggc tgg cac cgg cac gtg acc ctg gcg tcc atc gcc cac     1104
Ser Phe Gln Gly Trp His Arg His Val Thr Leu Ala Ser Ile Ala His
        355                 360                 365

acg ctg cgg ctg gcg cag ccc tcc gcg cgc ggc gac ctc ggt ggg gcg     1152
Thr Leu Arg Leu Ala Gln Pro Ser Ala Arg Gly Asp Leu Gly Gly Ala
    370                 375                 380

acg gcg gtg tga                                                     1164
Thr Ala Val
385


<210>  142
<211>  387
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  142

Met Thr Leu Arg Thr Leu Arg Pro Ala Gly Ala Ala Pro Pro Val Gly
1               5                   10                  15
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Pro Ala Ala Arg His Asp Phe Asp Ser Leu Val Ser Asp Ala Cys Ala
            20                  25                  30

Glu Leu Leu Gly Ser Leu Arg Arg Ala Asp Gln Arg Arg Arg Gly Glu
        35                  40                  45

Gln Tyr Ile Arg Gly Leu Leu Thr Ala Gln Gly Arg Lys Thr Ala Arg
    50                  55                  60

Asn Leu Ala Ala Phe Val Gly Glu Gly Ala Ala Glu Gln Ser Leu His
65                  70                  75                  80

His Phe Val Ala Gly Ser Thr Trp Asp Trp Gly Glu Val Arg Ala Ala
                85                  90                  95

Leu Ala Arg Tyr Val Asp Asp Arg Leu Thr Pro Asp Ala Trp Val Ile
            100                 105                 110

Trp Pro Met Val Val Ser Lys Ala Gly Val Arg Ser Val Gly Val Ser
        115                 120                 125

Arg Arg Phe Val Ser Asp Leu Gly Arg Val Val Ser Cys Gln Gln Ser
    130                 135                 140

His Gly Leu Trp Leu Ala Ser Gly Thr Thr Ala Ala Pro Val Ser Trp
145                 150                 155                 160

Arg Leu Thr Leu Gly Gly Gly Arg Ser Gly Glu Gly Thr Pro Arg His
                165                 170                 175

Pro Gly Ala Pro Gly Glu Glu Glu Asn Ile Val Arg Leu Val Ala Glu
            180                 185                 190

Ala Ala Gln Ala Asn Arg Ser Leu Ala Arg Pro Val Val Met Asp Ala
        195                 200                 205

Arg Ala Ala Val Leu Pro Arg Leu Val Arg Gly Leu Gly Leu Ala Gly
    210                 215                 220

Leu Pro Phe Met Val Arg Val Gly Gly Asn Leu Arg Leu Ala Ser Ala
225                 230                 235                 240

Ser Gly Arg Gly Pro Val Asp His His Thr Gly Thr Thr Ser Ala Gln
                245                 250                 255
```

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Gln Leu Met Glu Gln Leu Lys Arg Leu Ser Arg Pro Val Glu Leu Arg
            260                 265                 270

Gly Ser Leu Ser Leu Val Ala Pro His Pro Val Val Leu Pro Gly Val
        275                 280                 285

Val Pro Arg Arg Thr Leu Thr Leu Leu Gly Val Trp Arg Gly Asn Arg
    290                 295                 300

Arg Arg Pro Ala Asp Leu Trp Leu Thr Asp Leu Thr Ser Trp Asp Arg
305                 310                 315                 320

Gly Ala Leu Leu Arg Leu Ala Met Leu Thr Glu Gln Val Asp Ala Asp
                325                 330                 335

Phe Asp Arg Val Ser Val Gly Val Gly Met Arg Asp Phe Glu Gly Arg
            340                 345                 350

Ser Phe Gln Gly Trp His Arg His Val Thr Leu Ala Ser Ile Ala His
        355                 360                 365

Thr Leu Arg Leu Ala Gln Pro Ser Ala Arg Gly Asp Leu Gly Gly Ala
    370                 375                 380

Thr Ala Val
385


<210>  143
<211>  849
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(849)

<400>  143
atg cgt atc gcg gtg aca ggg gcg gcg ggc agt ctg ggc agg cgg gtg        48
Met Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val
1               5                   10                  15

gtg cag ctg ctc gcg gac cgg gcc gac gtg gac gtc gtg gcg atg acc        96
Val Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr
            20                  25                  30

agg cgg aag ctg cct gcc gag gca cta ccg ccg ggg gtg gag tgc gcc       144
Arg Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala
        35                  40                  45

gtc gcc gac tac gcc gac ccg ccc gct ctg cgt gcg gcg ctg aag ggc       192
```

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Val Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly
    50                  55                  60

gtg gac act ctg gtc ctc gtc tcc agc gac ggg ccc gac gca cgg gtg        240
Val Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val
65                  70                  75                  80

ctg ctg cac cac cgc aac gtc gtc gcc gcc gtg gtg gcc gag cgc gtc        288
Leu Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val
                85                  90                  95

ggc cat gtc gcg gca ctg agc agc gtc gac gcc gac tcg gcc tcc ccg        336
Gly His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro
            100                 105                 110

ttc tgc tac gcc gtc gtc aac cgg ctc acc gag gat ctg ctg ctc gcc        384
Phe Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala
        115                 120                 125

tcc ggc gtg ccg tgc tcg ttc gcc agg gcc tcg ctg tac atc gag ttc        432
Ser Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe
    130                 135                 140

ttc cta ggc tgg ctc acc cag gcg cgc tcg acc ggg ctg ctg agg ctg        480
Phe Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu
145                 150                 155                 160

ccg gca gcc gat ggc cgg gtg tcc ctg gtg gcg cgc gac gac gtg gcc        528
Pro Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala
                165                 170                 175

cgc gcc ctc gcc gcc ctc gcg gtg ggc ggg ccg acc ggc cgt cac cac        576
Arg Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His
            180                 185                 190

gac atc acg gga ccc gag tcg acg gac ctg gca ggc atc gcc tcc acg        624
Asp Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr
        195                 200                 205

gcg gcg gag gtg tgg cgg aca ccg gtc gcc tac gtg gac atc ccg gcc        672
Ala Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala
    210                 215                 220

gac acg tac tct gcc gaa aca gcg gcg acc ggc ctg gat ccc tgg tgg        720
Asp Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp
225                 230                 235                 240

ctc tac gcc ttc tcc tcc ctg ttc gcc tcg gta cgc gaa cag cgc tgg        768
Leu Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp
                245                 250                 255

gat cgg gtc cgc gac gac tgc gcc cag ctc acc ggc cgc ttg ccc cgc        816
Asp Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg
            260                 265                 270

act ctc cgc gac gtc ctg tca gaa cgc gcg tga                            849
Thr Leu Arg Asp Val Leu Ser Glu Arg Ala
        275                 280


<210>  144
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<211> 282
<212> PRT
<213> Streptomyces ambofaciens

<400> 144

Met Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val
1 5 10 15

Val Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr
20 25 30

Arg Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala
35 40 45

Val Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly
50 55 60

Val Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val
65 70 75 80

Leu Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val
85 90 95

Gly His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro
100 105 110

Phe Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala
115 120 125

Ser Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe
130 135 140

Phe Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu
145 150 155 160

Pro Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala
165 170 175

Arg Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His
180 185 190

Asp Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr
195 200 205

Ala Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala
210 215 220

```
Asp Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp
225                 230                 235                 240

Leu Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp
                245                 250                 255

Asp Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg
            260                 265                 270

Thr Leu Arg Asp Val Leu Ser Glu Arg Ala
        275                 280


<210>  145
<211>  1512
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1512)

<400>  145
gtg ggc gac gac cgg acc gac ccg gca tgg gga acc ttt ctc gaa ctg       48
Val Gly Asp Asp Arg Thr Asp Pro Ala Trp Gly Thr Phe Leu Glu Leu
1               5                   10                  15

ggc ggg ccg gcg gac ggc ccg ctg cac gtc cgg ctg agc cgt gcc ctg       96
Gly Gly Pro Ala Asp Gly Pro Leu His Val Arg Leu Ser Arg Ala Leu
            20                  25                  30

cgg gcg gcg gtg acc ggt ggg cgg atc gcc tcc ggc agc gcg ctg ccg      144
Arg Ala Ala Val Thr Gly Gly Arg Ile Ala Ser Gly Ser Ala Leu Pro
        35                  40                  45

ccg agc agg gcg ctg gcg gcg gac ctg ggc tgc tcg cgg tgg gtg gtg      192
Pro Ser Arg Ala Leu Ala Ala Asp Leu Gly Cys Ser Arg Trp Val Val
    50                  55                  60

acg gag gcc tac gcg cag ctc gtc gcg gag ggg tac ctg gag gcg cgc      240
Thr Glu Ala Tyr Ala Gln Leu Val Ala Glu Gly Tyr Leu Glu Ala Arg
65                  70                  75                  80

agc ggc tcg gcc acc cgg gtc agg gcg cag gcc gtc ccc gct ccg gtg      288
Ser Gly Ser Ala Thr Arg Val Arg Ala Gln Ala Val Pro Ala Pro Val
                85                  90                  95

acg ccc gag gcg gac gtc ggt acg cgg tgg gag ccg gag ttc gac atg      336
Thr Pro Glu Ala Asp Val Gly Thr Arg Trp Glu Pro Glu Phe Asp Met
            100                 105                 110

ctg ccc ggc ata ccc gac ctg cgg gcc ttt ccc cgc gga cgg tgg gcg      384
Leu Pro Gly Ile Pro Asp Leu Arg Ala Phe Pro Arg Gly Arg Trp Ala
        115                 120                 125

gac gcg gtg cgg gag gcc acc ggc gca ctg acc tgg ggc gag ctc ggc      432
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```
Asp Ala Val Arg Glu Ala Thr Gly Ala Leu Thr Trp Gly Glu Leu Gly
    130                 135                 140

tac ccc gat ccg gcc ggt ctc gcc cgg ctc cgg cag cgg ctc gcg gcc        480
Tyr Pro Asp Pro Ala Gly Leu Ala Arg Leu Arg Gln Arg Leu Ala Ala
145                 150                 155                 160

tac ctc gtg cgg gga cgc ggc gcg tcg ctg gaa gcc cgg cag ctc gtc        528
Tyr Leu Val Arg Gly Arg Gly Ala Ser Leu Glu Ala Arg Gln Leu Val
                165                 170                 175

gtc tgc gcg ggc acg ctg gac gcg gtg cgc agg ctg tgc cgg gtc ctg        576
Val Cys Ala Gly Thr Leu Asp Ala Val Arg Arg Leu Cys Arg Val Leu
            180                 185                 190

cgg acc gag ggc cac acc cac atg gcc ctg gag gac cct ggc tgg tcg        624
Arg Thr Glu Gly His Thr His Met Ala Leu Glu Asp Pro Gly Trp Ser
        195                 200                 205

cgg ctg agc gcc acg gtc ggg gcg gag ggg ctg gtg ccc gtc ccg gtt        672
Arg Leu Ser Ala Thr Val Gly Ala Glu Gly Leu Val Pro Val Pro Val
    210                 215                 220

ccc gtg gac ggc gac ggc ctg cgg gtc gac ctg ctg cgg cgc gcg cct        720
Pro Val Asp Gly Asp Gly Leu Arg Val Asp Leu Leu Arg Arg Ala Pro
225                 230                 235                 240

cag gtc cgg tcg gtg atc gtc gct ccc gcc cac cag ttc ccg acc ggt        768
Gln Val Arg Ser Val Ile Val Ala Pro Ala His Gln Phe Pro Thr Gly
                245                 250                 255

gtg gtc ctc gcc ccg gcc cgt cgc ggc gag ctg gtc gcc tgg gcc cgc        816
Val Val Leu Ala Pro Ala Arg Arg Gly Glu Leu Val Ala Trp Ala Arg
            260                 265                 270

gag gtc gac ggc ctg gtg ctg gag gac gac tac gac gcc gag ttc cga        864
Glu Val Asp Gly Leu Val Leu Glu Asp Asp Tyr Asp Ala Glu Phe Arg
        275                 280                 285

tac gac cgc cac ccc gtg ggc gcc ctg cag ggc atg gca ccg gag cac        912
Tyr Asp Arg His Pro Val Gly Ala Leu Gln Gly Met Ala Pro Glu His
    290                 295                 300

gtc gcg ctg ctg ggg tcg gtc agc aag acg ctc tcg ccg gcc ctg cgg        960
Val Ala Leu Leu Gly Ser Val Ser Lys Thr Leu Ser Pro Ala Leu Arg
305                 310                 315                 320

atc ggc tgg gcg gtg acc ccg ccg cgc tgg acc gag gcc ctg ggc gcg       1008
Ile Gly Trp Ala Val Thr Pro Pro Arg Trp Thr Glu Ala Leu Gly Ala
                325                 330                 335

gag cac gtc ggg ggc gta cca ccg ccc gtc atc gac cag gag gcg ttc       1056
Glu His Val Gly Gly Val Pro Pro Pro Val Ile Asp Gln Glu Ala Phe
            340                 345                 350

gcc cgg ttc ctg gcc cgc ggg tcc tac gac cgg tac ctg cgg gcg gca       1104
Ala Arg Phe Leu Ala Arg Gly Ser Tyr Asp Arg Tyr Leu Arg Ala Ala
        355                 360                 365

cgg ctg cgc tac aaa cgg cgc cgc gat cac ctc atg gga gaa ctc gcg       1152
Arg Leu Arg Tyr Lys Arg Arg Arg Asp His Leu Met Gly Glu Leu Ala
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370 375 380

gcg tcg ctg ccg ggg ttc cag gtg tcc ggt gcg gcg gcc ggc ttc cac 1200
Ala Ser Leu Pro Gly Phe Gln Val Ser Gly Ala Ala Ala Gly Phe His
385 390 395 400

ctg ctg ctg tcc ctg acg gac tgc tcg gcg ccc acc gtc gtc agg gag 1248
Leu Leu Leu Ser Leu Thr Asp Cys Ser Ala Pro Thr Val Val Arg Glu
405 410 415

gcg gcg cgg cgt gac gtg agg ctg gcg gat ctc gac gcc tac cgg atg 1296
Ala Ala Arg Arg Asp Val Arg Leu Ala Asp Leu Asp Ala Tyr Arg Met
420 425 430

gcg cgg gcc gag cac cac ccg acg gcc cgg gcc ggc gac tcc ggc ggg 1344
Ala Arg Ala Glu His His Pro Thr Ala Arg Ala Gly Asp Ser Gly Gly
435 440 445

gcg cgg gcc gtg gcc gcc gcc ggc ccc gcg ctg gtc ctc ggc tac ggc 1392
Ala Arg Ala Val Ala Ala Ala Gly Pro Ala Leu Val Leu Gly Tyr Gly
450 455 460

aat ctg gcg gac cac gcc gtg ccc gga gcc gtg cgg cgc ctg gca cag 1440
Asn Leu Ala Asp His Ala Val Pro Gly Ala Val Arg Arg Leu Ala Gln
465 470 475 480

gcc atc gac gcg gcc cgg cgc cac gac cgg cgg cac gtc gac gcc ggg 1488
Ala Ile Asp Ala Ala Arg Arg His Asp Arg Arg His Val Asp Ala Gly
485 490 495

cgg gcc ggg gag cgg gcc gac tga 1512
Arg Ala Gly Glu Arg Ala Asp
500

<210> 146
<211> 503
<212> PRT
<213> Streptomyces ambofaciens

<400> 146

Val Gly Asp Asp Arg Thr Asp Pro Ala Trp Gly Thr Phe Leu Glu Leu
1 5 10 15

Gly Gly Pro Ala Asp Gly Pro Leu His Val Arg Leu Ser Arg Ala Leu
20 25 30

Arg Ala Ala Val Thr Gly Gly Arg Ile Ala Ser Gly Ser Ala Leu Pro
35 40 45

Pro Ser Arg Ala Leu Ala Ala Asp Leu Gly Cys Ser Arg Trp Val Val
50 55 60

Thr Glu Ala Tyr Ala Gln Leu Val Ala Glu Gly Tyr Leu Glu Ala Arg
65 70 75 80

```
Ser Gly Ser Ala Thr Arg Val Arg Ala Gln Ala Val Pro Ala Pro Val
                85                  90                  95

Thr Pro Glu Ala Asp Val Gly Thr Arg Trp Glu Pro Glu Phe Asp Met
            100                 105                 110

Leu Pro Gly Ile Pro Asp Leu Arg Ala Phe Pro Arg Gly Arg Trp Ala
        115                 120                 125

Asp Ala Val Arg Glu Ala Thr Gly Ala Leu Thr Trp Gly Glu Leu Gly
    130                 135                 140

Tyr Pro Asp Pro Ala Gly Leu Ala Arg Leu Arg Gln Arg Leu Ala Ala
145                 150                 155                 160

Tyr Leu Val Arg Gly Arg Gly Ala Ser Leu Glu Ala Arg Gln Leu Val
                165                 170                 175

Val Cys Ala Gly Thr Leu Asp Ala Val Arg Arg Leu Cys Arg Val Leu
            180                 185                 190

Arg Thr Glu Gly His Thr His Met Ala Leu Glu Asp Pro Gly Trp Ser
        195                 200                 205

Arg Leu Ser Ala Thr Val Gly Ala Glu Gly Leu Val Pro Val Pro Val
    210                 215                 220

Pro Val Asp Gly Asp Gly Leu Arg Val Asp Leu Leu Arg Arg Ala Pro
225                 230                 235                 240

Gln Val Arg Ser Val Ile Val Ala Pro Ala His Gln Phe Pro Thr Gly
                245                 250                 255

Val Val Leu Ala Pro Ala Arg Arg Gly Glu Leu Val Ala Trp Ala Arg
            260                 265                 270

Glu Val Asp Gly Leu Val Leu Glu Asp Asp Tyr Asp Ala Glu Phe Arg
        275                 280                 285

Tyr Asp Arg His Pro Val Gly Ala Leu Gln Gly Met Ala Pro Glu His
    290                 295                 300

Val Ala Leu Leu Gly Ser Val Ser Lys Thr Leu Ser Pro Ala Leu Arg
305                 310                 315                 320
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Ile Gly Trp Ala Val Thr Pro Pro Arg Trp Thr Glu Ala Leu Gly Ala
325 330 335

Glu His Val Gly Gly Val Pro Pro Pro Val Ile Asp Gln Glu Ala Phe
340 345 350

Ala Arg Phe Leu Ala Arg Gly Ser Tyr Asp Arg Tyr Leu Arg Ala Ala
355 360 365

Arg Leu Arg Tyr Lys Arg Arg Arg Asp His Leu Met Gly Glu Leu Ala
370 375 380

Ala Ser Leu Pro Gly Phe Gln Val Ser Gly Ala Ala Ala Gly Phe His
385 390 395 400

Leu Leu Leu Ser Leu Thr Asp Cys Ser Ala Pro Thr Val Val Arg Glu
405 410 415

Ala Ala Arg Arg Asp Val Arg Leu Ala Asp Leu Asp Ala Tyr Arg Met
420 425 430

Ala Arg Ala Glu His His Pro Thr Ala Arg Ala Gly Asp Ser Gly Gly
435 440 445

Ala Arg Ala Val Ala Ala Ala Gly Pro Ala Leu Val Leu Gly Tyr Gly
450 455 460

Asn Leu Ala Asp His Ala Val Pro Gly Ala Val Arg Arg Leu Ala Gln
465 470 475 480

Ala Ile Asp Ala Ala Arg Arg His Asp Arg Arg His Val Asp Ala Gly
485 490 495

Arg Ala Gly Glu Arg Ala Asp
500

<210> 147
<211> 276
<212> DNA
<213> Streptomyces ambofaciens

<220>
<221> CDS
<222> (1)..(276)

<400> 147
gtg gcg gag acg gac cgg cat ctc gac cag cgg ctg gag cag gcc atc 48
Val Ala Glu Thr Asp Arg His Leu Asp Gln Arg Leu Glu Gln Ala Ile

1   5   10   15

atg gac ctg ctg gag cga cgg gcg gcc act gcc tcg atc tgt ccg tcc   96
Met Asp Leu Leu Glu Arg Arg Ala Ala Thr Ala Ser Ile Cys Pro Ser
            20   25   30

gac gcc gcg cgt cgg gtc cac gag ggt gac gac gag ggc tgg cga gcc   144
Asp Ala Ala Arg Arg Val His Glu Gly Asp Asp Glu Gly Trp Arg Ala
        35   40   45

ctg ctg gaa ccc gcg cgc cga gcg gcc tgg cgt ctg gtg ggg tcc ggc   192
Leu Leu Glu Pro Ala Arg Arg Ala Ala Trp Arg Leu Val Gly Ser Gly
    50   55   60

gag gtc gag gtg acc cag gcc ggc cgg ccc gtc acg cag gcc gag gcc   240
Glu Val Glu Val Thr Gln Ala Gly Arg Pro Val Thr Gln Ala Glu Ala
65   70   75   80

cgc ggg ccc gtc cgc att cgt cgg gcg ggt tcc tga   276
Arg Gly Pro Val Arg Ile Arg Arg Ala Gly Ser
                85   90

<210> 148
<211> 91
<212> PRT
<213> Streptomyces ambofaciens

<400> 148

Val Ala Glu Thr Asp Arg His Leu Asp Gln Arg Leu Glu Gln Ala Ile
1   5   10   15

Met Asp Leu Leu Glu Arg Arg Ala Ala Thr Ala Ser Ile Cys Pro Ser
            20   25   30

Asp Ala Ala Arg Arg Val His Glu Gly Asp Asp Glu Gly Trp Arg Ala
        35   40   45

Leu Leu Glu Pro Ala Arg Arg Ala Ala Trp Arg Leu Val Gly Ser Gly
    50   55   60

Glu Val Glu Val Thr Gln Ala Gly Arg Pro Val Thr Gln Ala Glu Ala
65   70   75   80

Arg Gly Pro Val Arg Ile Arg Arg Ala Gly Ser
                85   90

<210> 149
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<213> Streptomyces ambofaciens

<220>

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Leu Gln Ile Tyr Asp Cys Trp Gly Gly Ser Asn Gln Gln Trp Thr Leu
1               5                   10                  15

acg gac gac cgt cgg ctg acc gtg tac ggc aac aag tgc ctg gac gtt          96
Thr Asp Asp Arg Arg Leu Thr Val Tyr Gly Asn Lys Cys Leu Asp Val
            20                  25                  30

ccg ggt cac gcc acc aca ccc ggg acg cgg gtg cag atc tgg agc tgt         144
Pro Gly His Ala Thr Thr Pro Gly Thr Arg Val Gln Ile Trp Ser Cys
        35                  40                  45

tcc ggc ggt gcg aac cag cag tgg cgg gtg aac tcc gac ggc acg gtc         192
Ser Gly Gly Ala Asn Gln Gln Trp Arg Val Asn Ser Asp Gly Thr Val
    50                  55                  60

gtc ggc gtg gag tcc ggg ctg tgc ctg gag gcc gcg ggc gcc ggt acg         240
Val Gly Val Glu Ser Gly Leu Cys Leu Glu Ala Ala Gly Ala Gly Thr
65                  70                  75                  80

gcc aac ggc acg gcg gtg cag atc ggg acg tgc gtc ggt ggc agc ggg         288
Ala Asn Gly Thr Ala Val Gln Ile Gly Thr Cys Val Gly Gly Ser Gly
                85                  90                  95

cag aag tgg tcc ggc ctg acc ggg acg ccc ccg acg gac ggg gcg tgt         336
Gln Lys Trp Ser Gly Leu Thr Gly Thr Pro Pro Thr Asp Gly Ala Cys
            100                 105                 110

gcc ctt ccg tcg gcg tac cgg tgg tcg tcg acg ggt gtg ctg gcg cag         384
Ala Leu Pro Ser Ala Tyr Arg Trp Ser Ser Thr Gly Val Leu Ala Gln
        115                 120                 125

ccg gcg aac ggg tgg gcg gcg gtc aag gac ttc acc acc gtg acc cac         432
Pro Ala Asn Gly Trp Ala Ala Val Lys Asp Phe Thr Thr Val Thr His
    130                 135                 140

aac ggc aag cac ctg gtc tac gcg tcg aac gtg tcg ggg tcg tcc tac         480
Asn Gly Lys His Leu Val Tyr Ala Ser Asn Val Ser Gly Ser Ser Tyr
145                 150                 155                 160

ggc tcg atg atg ttc agc ccc ttc acg aac tgg tcg gac atg gcg tcg         528
Gly Ser Met Met Phe Ser Pro Phe Thr Asn Trp Ser Asp Met Ala Ser
                165                 170                 175

gcc ggc cag acc ggg atg agt cag gcg gcg gtg gcg ccc acc ctg ttc         576
Ala Gly Gln Thr Gly Met Ser Gln Ala Ala Val Ala Pro Thr Leu Phe
            180                 185                 190

tac ttc gcg ccc aag aac gtc tgg gtg ctg gcg tac cag tgg ggc gcg         624
Tyr Phe Ala Pro Lys Asn Val Trp Val Leu Ala Tyr Gln Trp Gly Ala
        195                 200                 205

tgg ccc ttc gtc tac cgc acg tcc agc gac ccg gcc aac ccc aac ggc         672
Trp Pro Phe Val Tyr Arg Thr Ser Ser Asp Pro Ala Asn Pro Asn Gly
    210                 215                 220

tgg tcg gct ccg cag ccg ttg ttc acc ggg agc atc tca gga tcc gac         720
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Trp Ser Ala Pro Gln Pro Leu Phe Thr Gly Ser Ile Ser Gly Ser Asp
225                 230                 235                 240

acc ggc ccg atc gac cag acc ctg atc gcc gac gga cag aac atg tac      768
Thr Gly Pro Ile Asp Gln Thr Leu Ile Ala Asp Gly Gln Asn Met Tyr
                245                 250                 255

ctg ttc ttc gcc ggt gac aac ggc aag atc tac cgg gcg agc atg ccg      816
Leu Phe Phe Ala Gly Asp Asn Gly Lys Ile Tyr Arg Ala Ser Met Pro
            260                 265                 270

atc ggg aac ttc ccg ggc agc ttc ggc tcg tcg tac acg acg atc atg      864
Ile Gly Asn Phe Pro Gly Ser Phe Gly Ser Ser Tyr Thr Thr Ile Met
        275                 280                 285

agc gac acg aag gcc aac ctg ttc gag ggc gtg cag gtc tac aag gtt      912
Ser Asp Thr Lys Ala Asn Leu Phe Glu Gly Val Gln Val Tyr Lys Val
    290                 295                 300

cag ggc cag aac cag tac ctg atg atc gtc gag gcg atg ggc gcg aac      960
Gln Gly Gln Asn Gln Tyr Leu Met Ile Val Glu Ala Met Gly Ala Asn
305                 310                 315                 320

gga cgc tac ttc cgt tcc ttc acg gcc tcc agc ctg agc ggc tcg tgg     1008
Gly Arg Tyr Phe Arg Ser Phe Thr Ala Ser Ser Leu Ser Gly Ser Trp
                325                 330                 335

acc ccg cag gcc gcg agc gag agc aac ccc ttc gcg ggc aag gcc aac     1056
Thr Pro Gln Ala Ala Ser Glu Ser Asn Pro Phe Ala Gly Lys Ala Asn
            340                 345                 350

agc ggg gcc acc tgg acc aac gac atc agc cac ggt gac ctg gtc cgc     1104
Ser Gly Ala Thr Trp Thr Asn Asp Ile Ser His Gly Asp Leu Val Arg
        355                 360                 365

gac aac ccc gac cag acc atg acc gtc gac ccc tgc aac ctg cgg ttc     1152
Asp Asn Pro Asp Gln Thr Met Thr Val Asp Pro Cys Asn Leu Arg Phe
    370                 375                 380

ctc tac cag ggc aag tca ccc acc gcg ggc ggc ccc tac gac cag ctg     1200
Leu Tyr Gln Gly Lys Ser Pro Thr Ala Gly Gly Pro Tyr Asp Gln Leu
385                 390                 395                 400

ccg tgg cgg ccg ggt gtg ctc acc ctg cgg cgc tga                     1236
Pro Trp Arg Pro Gly Val Leu Thr Leu Arg Arg
                405                 410


<210>  150
<211>  411
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  150

Leu Gln Ile Tyr Asp Cys Trp Gly Gly Ser Asn Gln Gln Trp Thr Leu
1               5                   10                  15


Thr Asp Asp Arg Arg Leu Thr Val Tyr Gly Asn Lys Cys Leu Asp Val
            20                  25                  30
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Pro Gly His Ala Thr Thr Pro Gly Thr Arg Val Gln Ile Trp Ser Cys
        35                  40                  45

Ser Gly Gly Ala Asn Gln Gln Trp Arg Val Asn Ser Asp Gly Thr Val
    50                  55                  60

Val Gly Val Glu Ser Gly Leu Cys Leu Glu Ala Ala Gly Ala Gly Thr
65                  70                  75                  80

Ala Asn Gly Thr Ala Val Gln Ile Gly Thr Cys Val Gly Gly Ser Gly
                85                  90                  95

Gln Lys Trp Ser Gly Leu Thr Gly Thr Pro Pro Thr Asp Gly Ala Cys
            100                 105                 110

Ala Leu Pro Ser Ala Tyr Arg Trp Ser Ser Thr Gly Val Leu Ala Gln
        115                 120                 125

Pro Ala Asn Gly Trp Ala Ala Val Lys Asp Phe Thr Thr Val Thr His
    130                 135                 140

Asn Gly Lys His Leu Val Tyr Ala Ser Asn Val Ser Gly Ser Ser Tyr
145                 150                 155                 160

Gly Ser Met Met Phe Ser Pro Phe Thr Asn Trp Ser Asp Met Ala Ser
                165                 170                 175

Ala Gly Gln Thr Gly Met Ser Gln Ala Ala Val Ala Pro Thr Leu Phe
            180                 185                 190

Tyr Phe Ala Pro Lys Asn Val Trp Val Leu Ala Tyr Gln Trp Gly Ala
        195                 200                 205

Trp Pro Phe Val Tyr Arg Thr Ser Ser Asp Pro Ala Asn Pro Asn Gly
    210                 215                 220

Trp Ser Ala Pro Gln Pro Leu Phe Thr Gly Ser Ile Ser Gly Ser Asp
225                 230                 235                 240

Thr Gly Pro Ile Asp Gln Thr Leu Ile Ala Asp Gly Gln Asn Met Tyr
                245                 250                 255

Leu Phe Phe Ala Gly Asp Asn Gly Lys Ile Tyr Arg Ala Ser Met Pro
            260                 265                 270
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Ile Gly Asn Phe Pro Gly Ser Phe Gly Ser Ser Tyr Thr Thr Ile Met
275 280 285

Ser Asp Thr Lys Ala Asn Leu Phe Glu Gly Val Gln Val Tyr Lys Val
290 295 300

Gln Gly Gln Asn Gln Tyr Leu Met Ile Val Glu Ala Met Gly Ala Asn
305 310 315 320

Gly Arg Tyr Phe Arg Ser Phe Thr Ala Ser Ser Leu Ser Gly Ser Trp
325 330 335

Thr Pro Gln Ala Ala Ser Glu Ser Asn Pro Phe Ala Gly Lys Ala Asn
340 345 350

Ser Gly Ala Thr Trp Thr Asn Asp Ile Ser His Gly Asp Leu Val Arg
355 360 365

Asp Asn Pro Asp Gln Thr Met Thr Val Asp Pro Cys Asn Leu Arg Phe
370 375 380

Leu Tyr Gln Gly Lys Ser Pro Thr Ala Gly Gly Pro Tyr Asp Gln Leu
385 390 395 400

Pro Trp Arg Pro Gly Val Leu Thr Leu Arg Arg
405 410

<210> 151
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<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide KF36

<400> 151
ttgccgtagc cgaggaccag cg 22

<210> 152
<211> 22
<212> DNA
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<220>
<223> Oligonucleotide KF37

<400> 152
cacatggccc tggaggaccc tg 22

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<210>  153
<211>  30
<212>  DNA
<213>  Artificial Sequence

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<223>  Oligonucleotide KF42

<400>  153
aagcttgtac ggcccacaga atgatgtcac                                       30


<210>  154
<211>  30
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Oligonucleotide KF43

<400>  154
aagcttcgac taccttggtg atctcgcctt                                       30


<210>  155
<211>  65
<212>  DNA
<213>  Artificial Sequence

<220>
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caaccgcttg agctgctcca tcaactgctg ggccgaggta tcgcgcgcgc ttcgttcggg      60

acgaa                                                                  65


<210>  156
<211>  65
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Oligonucleotide KF33

<400>  156
tgggtcccgc cgcgcggcac gacttcgact cgctcgtcta tctgcctctt cgtcccgaag      60

caact                                                                  65


<210>  157
<211>  65
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucleotide EDR71

<400>  157
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cgtcatcgac gtgcggggaa gacagaggtg ataccgatga tcgcgcgcgc ttcgttcggg      60

acgaa                                                                   65


<210>  158
<211>  65
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucleotide EDR72

<400>  158
gccagcacct cgtccagctg ctcgacggaa ctcacccccca tctgcctctt cgtcccgaag      60

caact                                                                   65


<210>  159
<211>  66
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucleotide KF52

<400>  159
gatccgccag cctcacgtca cgccgcgccg cctccctgac atcgcgcgcg cttcgttcgg      60

gacgaa                                                                  66


<210>  160
<211>  66
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucleotide KF53

<400>  160
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gcaact                                                                  66


<210>  161
<211>  2540
<212>  DNA
<213>  Streptomyces ambofaciens

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caccaggccg tcgacctcgc gggcccaggc gaccagctcg ccgcgacggg ccggggcgag     120

gaccacaccg gtcgggaact ggtgggcggg agcgacgatc accgaccgga cctgaggcgc     180

gcgccgcagc aggtcgaccc gcaggccgtc gccgtccacg ggaaccggga cgggcaccag     240
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cccctccgcc ccgaccgtgg cgctcagccg cgaccagcca gggtcctcca gggccatgtg    300
ggtgtggccc tcggtccgca ggacccggca cagcctgcgc accgcgtcca gcgtgcccgc    360
gcagacgacg agctgccggg cttccagcga cgcgccgcgt ccccgcacga ggtaggccgc    420
gagccgctgc cggagccggg cgagaccggc cggatcgggg tagccgagct cgccccaggt    480
cagtgcgccg gtggcctccc gcaccgcgtc cgcccaccgt ccgcggggaa aggcccgcag    540
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gggcgtcacc ggagcgggga cggcctgcgc cctgacccgg gtggccgagc cgctgcgcgc    660
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gcccaggtcc gccgccagcg ccctgctcgg cggcagcgcg ctgccggagg cgatccgccc    780
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cgatgctacc caccgccccg cgacggccgg gcggcggcgt ccacgggccc ggtgcacact    960
ggatggcgtg gcggagacgg accggcatct cgaccagcgg ctggagcagg ccatcatgga   1020
cctgctggag cgacgggcgg ccactgcctc gatctgtccg tccgacgccg cgcgtcgggt   1080
ccacgagggt gacgacgagg gctggcgagc cctgctggaa cccgcgcgcc gagcggcctg   1140
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gtctggtcga tcgggccggt gtcggatcct gagatgctcc cggtgaacaa cggctgcgga   1860
gccgaccagc cgttggggtt ggccgggtcg ctggacgtgc ggtagacgaa gggccacgcg   1920
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accgccgcct gactcatccc ggtctggccg gccgacgcca tgtccgacca gttcgtgaag   2040
gggctgaaca tcatcgagcc gtaggacgac cccgacacgt tcgacgcgta gaccaggtgc   2100
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ttgccgttgt gggtcacggt ggtgaagtcc ttgaccgccg cccacccgtt cgccggctgc 2160

gccagcacac ccgtcgacga ccaccggtac gccgacggaa gggcacacgc cccgtccgtc 2220

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ctccagatct gcacccgcgt cccgggtgtg gtggcgtgac ccggaacgtc caggcacttg 2460

ttgccgtaca cggtcagccg acggtcgtcc gtcaacgtcc actgctgatt gctcccgccc 2520

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